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CONTINUATION OF THE  
BULLETIN OF THE NUTTALL ORNITHOLOGICAL CLUB

{ NEW SERIES,  
Vol. XXXIV. }

# The Auk

A Quarterly Journal of Ornithology

EDITOR  
WITMER STONE



VOLUME XXXIV

PUBLISHED BY

**The American Ornithologists' Union**

CAMBRIDGE, MASS.

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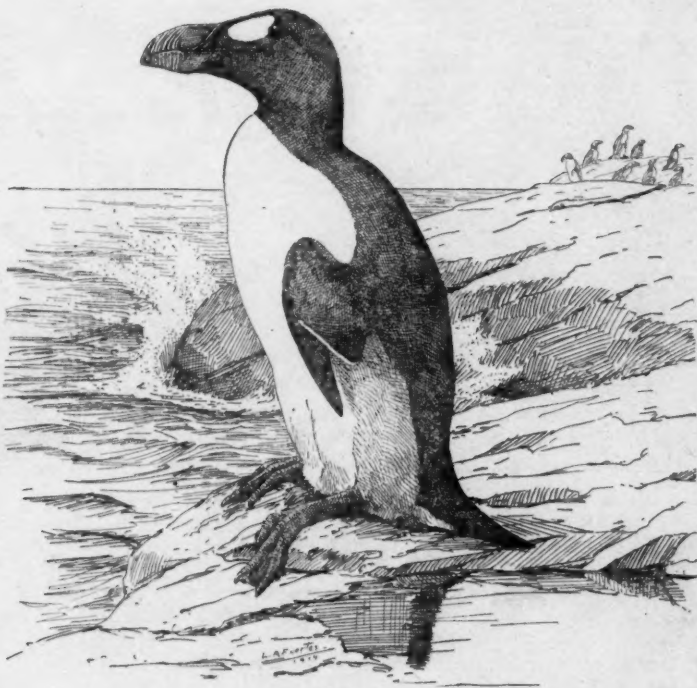
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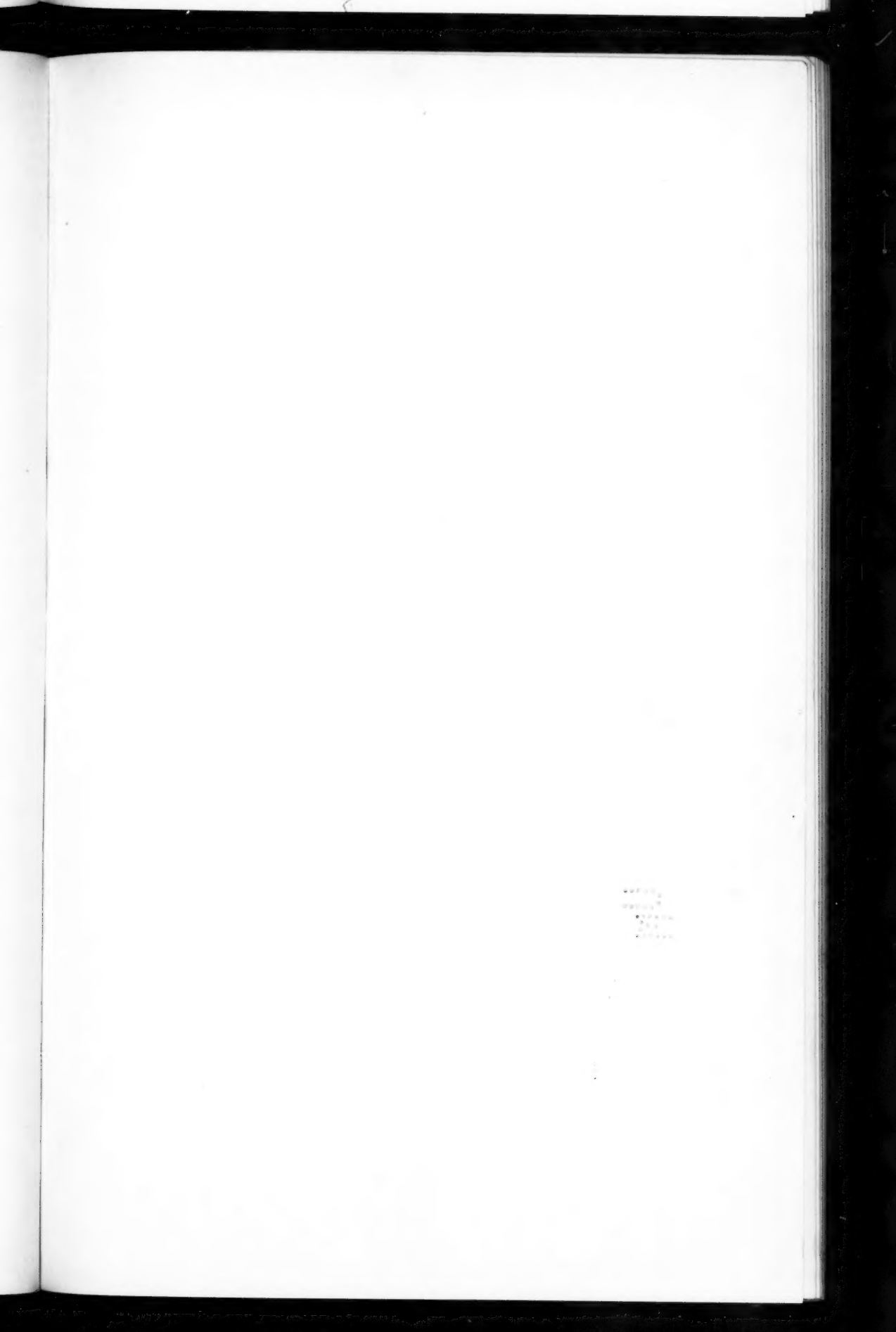
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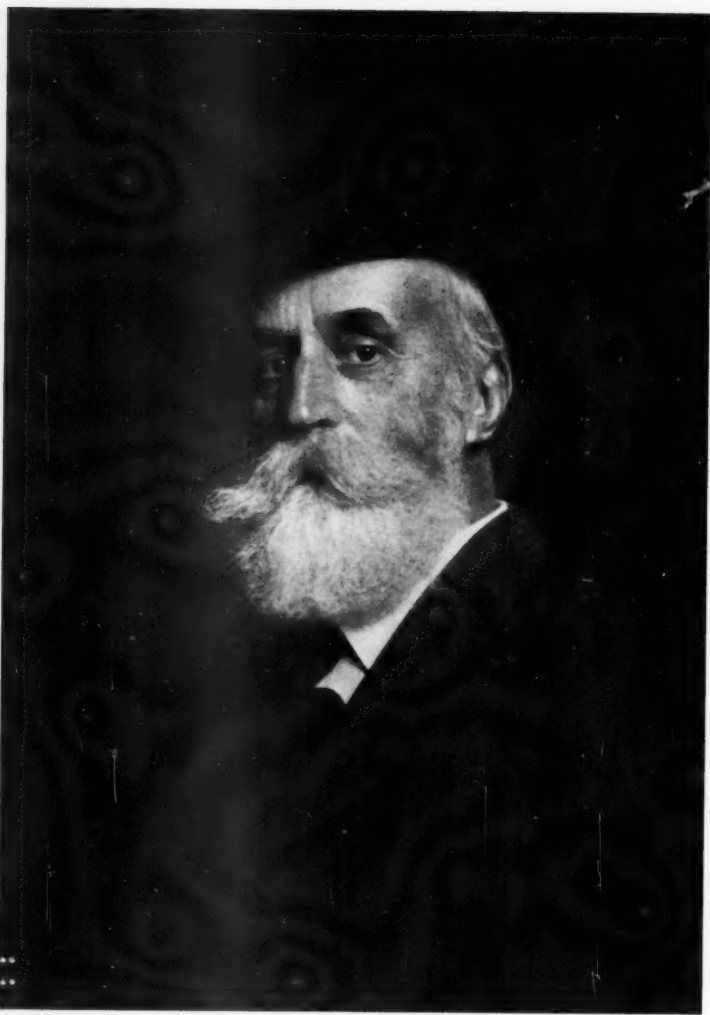
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Wm. Frank Jones  
Gallies

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DANIEL GIRAUD ELLIOT.

BY FRANK M. CHAPMAN.

*Plate I.*

DANIEL GIRAUD ELLIOT, A Founder of the American Ornithologists' Union, and its second President, died in New York City on December 22, 1915, in the eighty-first year of his age, from pneumonia after a short illness.

Dr. Elliot was born on March 7, 1835, in the city where he began and ended his career as a naturalist. He was the fourth son of George T. and Rebecca Giraud Elliot. His paternal ancestors were English and settled near New London, Connecticut, early in the 17th century. On his mother's side he was descended from French ancestors who settled at New Rochelle, New York, and moved to New York City some two centuries ago. He was married in 1858 to Ann Eliza Henderson, by whom he had two daughters, of whom but one, Margaret Henderson Elliot, is living.

Dr. Elliot prepared to enter Columbia College in 1852, but delicate health forced him to abandon a college course to seek climatic change. Thus was inaugurated a series of travels which either for the purposes of health, recreation, field exploration or museum research, led Dr. Elliot over a large part of the earth's surface.

The experience, specimens and data thereby acquired supplied the material on which his works were based, and we may begin our

record of Dr. Elliot's life by a summary of the opportunities for study which his travels and museum affiliations afforded him.

His first journeys were made to the southern United States and West Indies. In 1857 he went to Rio Janeiro and on his return crossed to Europe travelling from Malta to Sicily and thence to the Nile. From Cairo he crossed the desert to Palestine visiting Petra, Bethlehem, Jerusalem and Damascus, and crossed the Lebanon Mountains at an altitude of 10,000 feet. Thence he returned to Europe and America. During this journey the museums of London and Paris were visited, and relations established which prepared the way for Dr. Elliot's later studies at these institutions.

These occupied the greater part of the period between 1869 and 1883. It was during the first part of this time that as the representative of the recently organized American Museum, Dr. Elliot secured important collections of birds for that institution.

In 1883 on resuming his residence in New York City, Dr. Elliot made his headquarters at the Museum to which he had rendered such important service, and soon began to prepare systematic papers on certain groups of birds from specimens in its much enlarged collections, now under the care of Doctor Allen. Acting on behalf of the Museum, with Jenness Richardson, its taxidermist, he made a trip in 1888 to Montana in search of Bison. No living specimens were seen, but much valuable osteologic material was secured.

In 1894 Dr. Elliot accepted a call from the trustees of the recently organized Field Museum to become the Curator of its Department of Zoölogy, and he occupied this post until his resignation in 1906. Two years after going to Chicago Dr. Elliot organized and led a Field Museum expedition into Somaliland. He was attacked by a serious illness before the expedition was completed, but large collections had already been made which subsequently were added to the study and exhibition collections of the Field Museum. The African mammals which form so attractive a feature of the exhibition halls of the Field Museum were secured by this expedition and subsequently mounted by Carl E. Akeley, who accompanied Dr. Elliot to Africa. Recognizing Akeley's exceptional talents as an animal sculptor, Dr. Elliot had previously secured his services for the Field Museum.

The fact that Dr. Elliot was in his sixty-second year when he undertook this difficult African journey, and that he afterward made a collecting trip to the Olympic Mountains, is indicative of the energy and love of work which ever urged him from victory to fresh conquests.

His longest journeys, however, were made after he had resigned from the Field Museum and went in search of material on which to base his great monograph of the Primates. For this purpose he sailed for Europe in April, 1907, and remained abroad until 1909. After studying in all the principal museums of Europe he went to Egypt and to Ceylon, thence from Calcutta to Rangoon and passed through Burmah. Returning to Rangoon he went to the Straits Settlements and thence to Singapore. His route now led to Batavia in Java, and later to Hongkong, Canton and Shanghai. Then he journeyed 800 miles up the Yang-tse-Kiang to Hankow and from there he crossed to Peking and Tien-tsin, and back by sea to Shanghai. From China he went to Japan returning to New York through San Francisco.

Again taking up his quarters at the American Museum, which as a naturalist, in spite of his repeated absences, he always considered his real home, Dr. Elliot began to elaborate for his proposed monograph the enormous amount of data he had acquired in his travels.

The need for further study of the specimens in European collections arising, Dr. Elliot later revisited the museums of London, Paris, Leiden, Berlin, Dresden and Munich, before returning to New York to complete his monograph.

From this outline of Dr. Elliot's travels and researches in field and study, it will be observed that he had exceptional opportunities for the acquisition of the information embodied in the long list of publications which form so lasting and eloquent a record of his productive industry.

His first paper on birds, 'Descriptions of Six New Species of Birds,' was published in 'The Ibis' for October, 1859. Both the nature of the subject and the place of publication indicate that this paper was prepared during his first trip to Europe. It is evident moreover that this journey exerted a marked influence on the character of Dr. Elliot's ornithological studies which, following the European rather than American method, were monographic rather than regional in scope.

For the succeeding ten years, however, his studies were largely made and his works published in America. Aside from shorter papers, these include a 'Monograph of the Tetraonidæ' (New York, 1864-1865), an imperial folio with twenty-seven hand-colored plates; a 'Monograph of the Pittidæ' (New York, 1867), an imperial folio with thirty-one colored plates. The new and heretofore unfigured species of the 'Birds of North America' (New York, 1866-1869), in two imperial folio volumes with seventy-two colored plates, and 'A Monograph of the Phasianidæ' (New York, 1872) also in two folio volumes with forty-eight colored plates.

With few exceptions the illustrations for these works were made by Dr. Elliot himself, and no expense was spared in their reproduction or in the setting of the text, and these monographs were the most elaborate publications of the kind which had appeared in this country.

Although the Monograph of the Pheasants was published in this country, the studies on which it is based were doubtless largely made abroad, and its preparation therefore opens the period of Dr. Elliot's long residence in Europe beginning in 1869, and covering most of the period to 1883.

His work on the Pheasants was soon followed by 'A Monograph of the Paradiseidæ' (London, 1873), a folio with thirty-seven colored plates, and this in turn by a 'Monograph of the Bucerotidæ' (London, 1876-1882), a folio with fifty-nine colored plates; and 'A Monograph of the Felidæ' (London, 1883), a folio with forty-three colored plates.

Recognizing his own limitations as an artist, Dr. Elliot secured drawings by Wolf and Keulemans for these later works, which attained to the high ideal set by the trained taste and excellent judgment of their author.

During this period many shorter papers were published in 'The Ibis,' 'Proceedings of the Zoological Society' and elsewhere, and in 1879 'A Classification and Synopsis of the Trochilidæ,' a quarto memoir of 300 pages, appeared as a "Smithsonian Contribution to Knowledge."

After returning to New York, the years between 1883 and 1894 were occupied in preparing the parts relating to the Gallinæ, Columbidae and Trochilidae for the Standard Natural History, a wholly



new edition of the Pittidæ, reviews of several genera, and three handbooks on the Anatidæ, Limicolæ and Gallinæ of North America. As a sportsman Dr. Elliot had an extended field experience with the members of these families, much of which is contained in the biographical sections of these popular monographs.

The twelve years during which Dr. Elliot was connected with the Field Museum were the most fruitful of his life. His studies were now wholly devoted to mammals and despite the demands upon his time made by executive duties, and his expedition to Africa, he produced the following works of major importance: 'Synopsis of the Mammals of North America' (1 vol., 8vo, 1901); 'The Land and Sea Mammals of Middle America and the West Indies' (2 vols., 8vo, 1904); 'A Check-List of the Mammals of the North American Continent, the West Indies and Neighboring Seas' (1 vol., 8vo, 1905) and 'A Catalogue of the Collection of Mammals in the Field Columbian Museum' (1 vol., 8vo, 1907). These were all published by the Field Museum.

The extended journeys made after his resignation from the Field Museum (1906) were as we have already seen productive of the great Monograph of the Primates. This was Dr. Elliot's last published work, and at the time of his death he was engaged in preparing an appendix to his 'Synopsis of the Mammals of North America.'

It was not, however, only through his published works that Dr. Elliot served the branches of science to which in the most literal sense of the expression, his life was devoted.

Fortunately for the institutions concerned, his was the guiding hand in laying the foundation of the Zoölogical Departments of two of the great museums of this country — the American Museum and the Field Museum. With a practical knowledge of the requirements of a working museum, Dr. Elliot was also a man of affairs who could impress the trustees of the institutions concerned with the soundness of his views. His services in acquiring collections of birds and mammals for the American Museum were of exceptional importance since, at the time, he was one of the few men, perhaps the only man in America qualified to give the advice needed. Recognizing his fitness, the trustees of that institution commissioned him to purchase material during a journey which, in the winter of 1868-69, he was about to make to Europe.

He therefore acquired the Maximilian of Wied collection, containing many types of South American species, the A. L. Heermann collection from the southwestern United States, and a large representative collection of the birds of the world, including a Great Auk, was purchased from the Parisian dealers, Verreaux Frères.

Dr. Elliot's own collection of about 1000 North American birds including four specimens of the Labrador Duck, a bird which he himself saw in the flesh in New York markets, had already been secured by the Museum; and he later (1888) presented to it the fine collection of Hummingbirds on which his 'Monograph' of this family was based; at the same time the Museum also came into possession of Dr. Elliot's valuable ornithological library containing many rare works of reference, and complete files of such indispensable magazines, as 'The Ibis' and 'Proceedings of the Zoological Society.'

Both abroad and at home Dr. Elliot's services to science were recognized by the bestowal of many honors. He was the first American to be elected a Member of the British Ornithologists' Union; he was a Fellow of the Zoological Society and served for years on its Publication Committee; he was also a Fellow of the Royal Society of Edinburgh, a Founder and Vice-president of the Zoölogical Society of France and the recipient of decorations from several European powers.

As already stated, Dr. Elliot was a Founder of the American Ornithologists' Union, and its President in 1890 and 1891, while the Nuttall Ornithological Club, Linnæan Society and New York Zoölogical Society elected him to honorary membership. In 1906 Columbia University conferred upon him the degree of Doctor of Science; in 1914 the Linnæan Society of New York presented him with its medal, and in 1915 he was elected a member of the Board of Trustees of the American Museum.

To this record of the more significant events and achievements in Dr. Elliot's career as a naturalist, which might be compiled by any biographer having access to the needed sources of information, the memorialist feels it to be his special duty to add some account of the man himself. Dr. Elliot was the last link connecting us with what Dr. Coues termed the Cassinian Period of American Ornithology — or the years between 1853 and 1858. When he

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began his studies of birds, Baird, Cassin, and Lawrence were the only working ornithologists in America. There were no bird-clubs, no A. O. U., no Museum of Natural History in the city in which he resided. There was, however, in New York at that time a taxidermist, John G. Bell, whom it will be remembered accompanied Audubon in 1843 on the Upper Missouri Expedition. Many of Dr. Elliot's specimens were preserved by Bell, to whom, indeed, was entrusted the task of mounting the Elliot collection after it had been acquired by the American Museum. It was the memorialist's privilege to know Bell during the latter years of his life. He was a man of marked personality and ardent enthusiasms, and it is more than probable that he was of assistance to young Elliot, not only in the preparation and identification of specimens, but that he also was influential in developing his inherent love for the study of birds.

In an address given before the Linnæan Society on March 24, 1914, acknowledging the receipt of the Society's Medal of Honor, Dr. Elliot himself presents us with an interesting sketch of the conditions under which he began his life-work:

"I do not suppose that my boyhood was different from that of any other lad who had been inoculated with the virus that was to strengthen and increase in power more and more with the passing years, until it should dominate and control his entire life. I began to make a collection of birds — why I began I have no idea, probably could not help it — and when it verged toward completion I did not know what to do with it, for there was no one of my age anywhere to be found who sympathized with me in my pursuit, or with whom I could rejoice upon the acquisition of some rare specimen; I was practically alone. My cousin Jacob Giraud, the author of the "Birds of Long Island," had just entered upon the close of his career, and wrote no more; Audubon, with decayed mental faculties had entered upon the last year of his life; DeKay had died in Albany, and in all the cities and within the boundaries of our great state there was but one working ornithologist, George Newbold Lawrence, a man greatly older than myself, whose sons were my friends and companions, but who had not inherited their father's scientific taste, and their interest in birds was simply that of shooting and eating them; a gastronomic fancy shared in by all the rest of the population. . . . In Massachusetts there were

no ornithologists. Neither Allen nor Brewster had appeared, and their predecessor, Brewer, had hardly been heard from. Philadelphia was much better off. It had its Academy, collections and library, donated mainly by Dr. Wilson, and for its Curator of Ornithology, John Cassin, one of the most erudite and competent ornithologists this country has ever produced, and the only one of his time familiar with exotic forms. Leidy was at the height of his career, engaged upon the works which have brought him such a celebrated name. I worked a good deal in the old building, corner of Broad and Sansom Streets, my companion often having been Cope, then starting upon his career, and we used to labor at the same table, he with his alcoholic snakes and lizards, and I with my birds; and as I was shy of having my material brought in contact with his, he usually occupied the greater part of the table.

"With Cassin I was brought into rather intimate communication, because when I began to publish my monographs the plates were colored at the establishment of Bowen and Company, who served Audubon for so many years, and of which firm Cassin was then the head, and we were in constant correspondence as well as personal communication for a number of years. In Washington, Baird had only lately come to the Smithsonian Institution, and with that great patience for which he was noted and the methods of diplomacy which carried him so far in after years, he was feeling his way in his position as Assistant Secretary, not having much of the sympathy of his chief, Henry, who did not hesitate to declare that he would have sent all the specimens of mammals and birds out of the Institution if he had his way. There was no other naturalist then in Washington. Gill had just begun his study of fishes, but Ridgway or Coues had not yet peeped. In all the length and breadth of the land there was not a periodical devoted to the ways of birds, and it was hard sledging for a budding ornithologist."

Fortunately Dr. Elliot was so situated that he could give himself both time and opportunity to develop this obviously inborn taste. With the exception of his Curatorship in the Field Museum, he never held a paid position as a naturalist, and his pursuit of his researches at a time when studies of this kind were far from being encouraged, is an indication of the strength of the interest which never lost its fascination for him.

His last task, the 'Monograph of the Primates,' was the greatest in size and most important in scientific value of any he had previously undertaken. While engaged in its preparation at the American Museum, he was one of the first of the scientific staff to reach his office, and with only a few minutes' pause for luncheon applied himself continuously to the monotonous labor of compiling synonymy and describing specimens. He seemed never to tire in either mind or body, but stuck persistently to whatever task he had in hand until it was completed. This ability to concentrate for many consecutive hours day after day, was one of Dr. Elliot's prominent characteristics, and goes far to account for the magnitude of his achievements. He was possessed of a phenomenal memory and could deliver *verbatim* an extended written paper without the aid of manuscript, or could recall with equal accuracy the exact language of an *impromptu* address. His eloquent tribute to Selater and his associates delivered before the American Ornithologists' Union at its Congress in New York City, in 1913, was written, committed to memory and delivered without the aid of a note, and with the fluency and impressiveness which marked Dr. Elliot's public utterances.

Dr. Elliot was possessed of an exceptionally distinguished presence. Tall, and of fine figure, he carried himself with an easy erectness which never yielded to the weight of years. To strangers he appeared reserved, but this natural dignity of manner was merely the shield of a gentle, kindly, sympathetic nature, behind which one found a charming and congenial companion. His friendships, if slowly made, were enduring. Enemies, he had none, and even when his views differed radically from those held by others, I do not recall ever hearing him use a harsh or unjust word in criticism.

I was but an infant in ornithology when, in 1887, I first met Dr. Elliot at the American Museum; but our mutual interests soon bridged the gap separating us in knowledge as well as in years, and to my surprise I found that the courtly gentleman who at first had inspired in me no small degree of awe, was as fun-loving as a boy. Perhaps I may be permitted the relation of one personal incident, since it illustrates both Dr. Elliot's knowledge of a family of birds in which he was especially interested, as well as his consideration for the errors of his associates.



In July, 1889, falling a victim to one of the jokes which native collectors sometimes unconsciously play on unsuspecting and inexperienced ornithologists, I described as new a Hummingbird from the Bogotá region. In acknowledging receipt of a copy of the description, Dr. Elliot, then absent from the Museum, mildly expressed his doubts as to the validity of the proposed new form, and on re-examination of the type and only known specimen, I found that it was composed of the head of one species and the body of another, so skilfully joined that it required close examination to detect the fraud.

A second paper was therefore written stating the true status of the alleged 'new species.' Before this confession of error was published, Dr. Elliot returned to the museum, and with a hope that he might possibly fall into the trap I had so unwittingly entered, I said nothing of my latest discovery and merely handed him the type of the 'new species' for examination. This was twenty-seven years ago, but I can still clearly see Dr. Elliot, after only a momentary examination of the specimen, looking at me over his glasses and hear him saying, with as much sympathy in his voice as though he himself had been responsible for the error, "See here my boy, there's something wrong." To his trained eye the fraud was as obvious as though I had shown him a Bluebird's body with a Cardinal's head. Nothing remained for me to do, therefore, but produce the manuscript of my confession with which I had taken the precaution to arm myself.

Dr. Elliot was in his seventy-eighth year when his great monograph of the Primates was completed. At this age most men, even those who have retained an exceptional measure of health and vigor, consider their life-work as ended. Few of their early associates remain and the days devoid of either duty or pleasure drag wearily along. But those who were privileged to know Dr. Elliot in these last years of his life never thought of him as old. Time, it is true, had left its visible marks, but his mind was as young, his interests as keen as those of men who could count but half his years. If the friends of his youth had gone, community of interests brought him new ones. Occupation never was wanting, for there were always fresh fields inviting conquest, and to the end he retained that joy in his work which is the priceless heritage of the born naturalist.



THE ORANGE-CROWNED WARBLER AS A FALL AND  
WINTER VISITANT IN THE REGION OF BOSTON,  
MASSACHUSETTS.<sup>1</sup>

BY HORACE W. WRIGHT.

MY records of the Orange-crowned Warbler (*Vermivora celata celata*) in the Boston Region during a period of eight years ending with January, 1916, supplemented by the records of other observers, indicate that in recent years one or more individuals of the species are not unlikely to be found here by an observer who is much afield in the late autumn or early winter. To be sure, it is pretty much a matter of good fortune to find the individual bird or birds, since several fellow members of the Nuttall Ornithological Club inform me that they have not in a life's experience seen one in the wild. My own experience is, therefore, a fortunate one.

Mr. William Brewster in his 'Birds of the Cambridge Region,' published in 1906, gives nine records within the years 1885-1905, seven records of birds in his own garden and two others in Belmont. He has now kindly furnished me with two subsequent records for his garden, one in 1910 on November 20-21 and one in 1914 on September 23. Mr. Brewster's interesting experience and testimony first established the fact that the Orange-crown is more than an accidental visitant in the autumn in this region. My own records corroborate this idea and suggest, together with his, that while the species must still be regarded as a rare migrant, yet it may be looked for with a fair degree of expectation of finding it.

Mr. Brewster's eleven records lie within the period of the autumn from September 23 to November 28. There are three for September, namely, the 23d, and the 30th twice; none for October; and eight for November, namely, 7th, 9th, 10th, 17th, 20th-21st, 23d-24th, 25th, and 28th. On two occasions two birds were present, November 9 and 28. My own records run later. The earliest is November 5, and the latest is January 23. They are November 5, 18, 20, 22, 28, 29, December 3, 7, 9, 20, January 10,

<sup>1</sup> Read before the Nuttall Ornithological Club, April 17, 1916.

19, 23. Thus the species may be regarded not only as a late fall migrant, but even as a winter visitant. The records of other observers, as hereafter given, also indicate this.

In connection with my own records, it has been interesting to look up published records of the Orange-crowned Warbler for the whole section of New England and the Middle Atlantic States. The result of the investigation follows.

In Knight's 'Birds of Maine,' published in 1908, I find it only in the hypothetical list, with the inference that there is no well authenticated instance of its occurrence in the State. Mr. Knight regards the set of eggs in the Smithsonian Institution which were collected near Brunswick, Maine, and referred to this species, but the data of which seem to be lacking, as more likely to be that of the Nashville Warbler, and states that Audubon's record of the species breeding in Eastern Maine seems very likely a mistake, and that subsequent writers have so regarded his statement.

In Allen's 'Birds of New Hampshire,' published in 1903, one spring record is given, that of a single bird taken May 16, 1876, by Dr. W. H. Fox at Hollis. There is no autumn record.

Miss Alice W. Wilcox, director of the Fairbanks Museum of Natural Science at St. Johnsbury, Vermont, writes me, "We are quite outside the range of the Orange-crowned Warbler. No record that I know of has been made of it in Vermont. Our museum specimen is from Texas."

In Howe and Allen's 'Birds of Massachusetts,' published in 1901, four records are given: one shot at Springfield, May 15, 1863, by Dr. J. A. Allen, "who saw several other birds at the same time which he believed to be of this species"; one taken at Lynn, January 1, 1875 (by Dr. Brewer); a female taken by Mr. William Brewster on October 2, 1876, at Concord; and an adult male captured in the autumn of 1885 (September 30) in Belmont by Mr. H. W. Henshaw. The last record is included by Mr. Brewster in his list of occurrences in the Cambridge Region.

Rhode Island furnishes three published records. In Howe and Sturtevant's 'Birds of Rhode Island,' published in 1899, with supplement thereto in 1903, it is stated that one was shot by Mr. F. T. Jencks at Cranston, December 3, 1874, and a male bird was taken in East Providence on May 9, 1891. Of the former

occurrence Mr. H. A. Purdie, in a "Notice of a Few Birds of Rare or Accidental Occurrence in New England" (Bull. N. O. C. II., 1877, p. 21), says that it is the fifth specimen reported for New England and the second taken in the winter season. The bird taken by Dr. Brewer in Lynn, Mass., January 1, 1875, is, doubtless, the other winter occurrence referred to. The third record for the State has been furnished by Mr. Henry S. Hathaway (Auk, Vol. XXX, Oct., 1913, p. 556), namely, "A male of this very rare migrant was shot by the late James W. Stainton in Cranston on May 17, 1892. It is now in the collection of Rhode Island birds in the Park Museum of Providence."

In 'Birds of Connecticut' by Messrs. Sage, Bishop and Bliss, published in 1913, five records are given: a male shot in company with Nashville Warblers at East Hartford, May 8, 1888, by W. E. Treat; a female secured by L. H. Porter at Stamford, November 11, 1893; a male taken by L. B. Bishop on October 1, 1906, at New Haven; a young male taken by E. S. Woodruff at New Haven, October 8, 1906; and one seen by Dr. Bishop, October 6, 1911, at New Haven.

These New England records, dating from 1863, exclusive of Mr. Brewster's and my own, aggregate five in the spring in the years 1863, 1876, 1888, 1891, 1892 respectively; six in the fall in the years 1876, 1885, 1893, 1906 (two), 1911; and two in the winter, December 3, 1874, and January 1, 1875. Mr. Brewster adds ten records, all in the fall, one of his published nine records, that of the bird secured by Mr. Henshaw at Belmont in 1885 already having been enumerated. My records number thirteen. of which six were in the fall, all in November, and seven in the winter. The fall records are definitely those of six different individuals. The seven winter records not improbably include but five different individuals. Neither Mr. Brewster nor I have any spring record.

My thirteen records are of a single bird in each instance, namely: 1905, January 19 and 23, Abington, Plymouth Co.; 1908, November 5, Middlesex Fells, Stoneham; 1908, November 29, Cambridge, near Fresh Pond; 1910, December 3, Olmsted Park, Brookline, beside Leverett Pond; 1913, November 22, Belmont; 1914, November 18, Belmont; 1915, November 20, Olmsted Park,

Boston, beside Jamaica Pond; November 28, Fresh Pond reservation, Cambridge; December 7 and 9, Olmsted Park, Boston; December 20, Olmsted Park; 1916, January 10, Fresh Pond reservation, Cambridge, seen by Mrs. B. W. Parker and Miss Alice M. Paul on the 26th.

The 1905 bird was found in Island Grove Park in a grove of tall pines on a day when the ground was bare, feeding with a numerous band of Chickadees on the surface. Many views of it were obtained between its successive short flights from place to place, and a full description of its plumage was written down in my note book. I was puzzled at the time what name to put upon this warbler, for I had not as yet an acquaintance with the Orange-crown. Again, four days later, I visited the grove and readily found the warbler with the Chickadees, as before most of the time feeding on the ground, but sometimes in oak or pine saplings, and only when disturbed flying up into a taller tree, from which perch it would soon drop to the ground once more. Again a full description of the bird was written out in my note book. But it was not until I had had my subsequent experiences with the Orange-crowned Warbler that I could name this Abington bird with a sense of certainty as to its identification. Five days later I again visited the grove with Mr. Maurice C. Blake as a companion. Meanwhile a blizzard at a temperature of  $11^{\circ}$ , depositing a foot or more of snow, which lay upon the ground, had occurred. We could not find the warbler with the most careful and persistent searching. Its companions were present, the Chickadees, Red-breasted Nuthatches, and Brown Creepers, thirty of the first named, three of the nuthatches, and eight or ten of the creepers. Three Myrtle Warblers also were seen. We hoped the Orange-crown got safely away, but the chances seemed to point to its death by the storm. A temperature as low as  $5^{\circ}$  had already occurred on January 6, but there had been only light snows of not much depth up to the 25th. Abington is nineteen miles southward from the State House on Beacon Hill.

The first 1908 bird, seen on Bear Hill in the Middlesex Fells reservation, was also much upon the ground and at other times in low growth of bushes, the common barberry and privet. Its companions were Chickadees, Fox Sparrows, Juncos, and a Yellow

Palm Warbler. A spring of pure water was near at hand from which flowed a little stream. The second 1908 bird was seen in the rose garden of the late John C. Gray, Esq., whose estate is situated near Mount Auburn Cemetery, Cambridge. This bird frequently gave a sharp "chip" call.

The 1910 bird, a second winter bird, was seen on December 3, a clear, moderately cold day, with a temperature range from 24° to 32°. About noon I came upon the Orange-crown actively moving through shrubbery near Leverett Pond, sometimes resting on the topmost branches and thus affording very complete views of itself. This bird had as a companion the still more rare Blue-gray Gnatcatcher (Auk, Vol. XXVIII, Jan., 1911, p. 117). It was silent. The general coloring was brighter than that of the birds previously seen, which were much more dusky. It was regarded, therefore, as probably an adult male bird. Both birds were seen on the following day by Mr. Richard M. Marble, having moved only a short distance southward in the park, but having passed across the boundary line from Brookline to the Boston side.

The 1913 bird came to view in a small glen in that undeveloped part of Belmont Highland which lies next to Arlington Heights. I had been in search of Acadian Chickadees, nine of which I had successively seen (Auk, Vol. XXXI, April, 1914, p. 236). A Winter Wren had just presented itself after announcing its presence by its nervously rapid calls. The Orange-crown appeared close by in company with Golden-crowned Kinglets. A little run of water flows through the glen. The warbler was seen on barberry bushes growing among scattered cedars.

The 1914 bird was also seen in Belmont in a pasture with a scanty bush growth, occupying a rather limited group of bushes. An old apple orchard and some swampy land with birches were near, which were, doubtless, an additional attraction. My own experience, however, is that the Orange-crowned Warbler much more frequents shrubbery than trees.

The first bird of 1915 was seen close to the shore of Jamaica Pond on November 20, in the planting of shrubs which borders the footpath, appearing as I proceeded along the walk. The second bird of the season was seen at Fresh Pond on November 28. I had gone up to the reservation with my sister in the afternoon of a rare



late autumn day in which the temperature had risen to 57°, with the air calm. One of the first birds observed was an Orange-crown in the thick shrubbery, as we ascended a flight of steps from the shore of the Cambridge cove of the pond to the park land above, occupied in part by large hemlocks and white pines, with fringes of shrubs. Its companions were Chickadees. On one of the hemlocks was a White-winged Crossbill in the plumage of the female, the only one seen in the fall and winter of 1915. Before leaving the grove we had seen the warbler several times by returning to its chosen haunt. Just before sunset another interesting bird appeared in the form of a Great Blue Heron in the sky, flying over the pond southward. I searched for the warbler the following morning, but could not find it.

On December 7, I once more found an Orange-crown near Jamaica Pond in a somewhat extensive growth of young hemlocks near the memorial to Francis Parkman. It was in association with a late migrating Ruby-crowned Kinglet, two Golden-crowned Kinglets, and Chickadees. Mr. C. E. Clark of Medford had joined me, and we viewed the warbler together. It frequented the ground under the hemlocks much more than the branches of the trees. When undisturbed, it was generally feeding on the ground, and it sought the branches only when our approach became too close. Mr. H. L. Barrett recorded this bird on December 5, and Mrs. Lidian E. Bridge on December 8. The location of this Orange-crown was nearly identical with that of the bird of November 20, except that the hemlock growth stands somewhat farther back from the shore of the pond across the park drive. But that it was the same individual may be questioned, since I had looked for the warbler of November 20 on four successive walks through the park in the intervening time, namely, on November 23, 27, 29, and December 2, and had not been able to find it. On December 9, however, I again saw this later Orange-crown in the same location. On December 20 once more one was seen in the hemlocks. I had supposed that the last record for the season had already been obtained, for I had been through the park on December 13, 15, and 18, and Mr. F. H. Allen, as well as others, had looked carefully for the bird of December 5 to 9 on the 11th and 12th, and no one of us had been able to find it. It may not be unreasonable to infer,



therefore, that three individuals successively visited this locality in the season of 1915, as Mr. Brewster's garden records of 1891, namely, one on November 10, one on November 25, and two on November 28, seem to indicate a succession of migrants; also his records of 1900, namely, two on November 9 and one on November 23-24. If our supposition be correct, this bird of December 20 was the fourth for the season.

On January 10, 1916, again I found an Orange-crowned Warbler in close proximity to the Fresh Pond reservation. A damp snow was falling fast at the time the bird was seen, but later in the day the precipitation became rain. Directly upon leaving the electric car at the parkway, the warbler appeared in a low hedge of *Berberis thunbergii*, bordering the front yards of the houses standing in a row on the drive. It was presently clearly identified. The bird moved along in advance of me down through almost the entire length of the hedge row, 400 or more feet, passing on by short flights, while I successively advanced from stops made for repeated observations. The sharp "chip" call was given. It proved to be the only bird abroad on this occasion, for I passed on to the park, and in a half-hour's time no other bird gave evidence of its presence by flight or call. This warbler is scarcely likely to have been the warbler of November 28, since I had made visits to the reservation on December 1, 4, 10, 16, 23, 25, and January 5, and had seen no Orange-crowned Warbler. It may be regarded, therefore, as the fifth individual for the season. On January 26 this bird, presumably the same, was seen by Mrs. B. W. Parker and Miss Alice M. Paul on the west side of the reservation upon a bank covered with young white pines and shrubs. The warbler was observed on the ground, as is not uncommonly the case. Golden-crowned Kinglets had already been viewed by the ladies, when the warbler appeared. Their testimony seems conclusive that the Orange-crown seen by me on the 10th was still present in the reservation on the 26th. I am informed also that two other observers had seen this warbler a day or two previous to that date. Only one period of snow-covered ground had occurred up to that time. The last days of December and early days of January had furnished about six inches of snowfall, which gradually had been disappearing until before the end of the month the ground was entirely bare of

ice and snow, and conditions were still favorable for gleaning food even upon the surface.

There had been two minima temperatures of 8° and one of 4° in the month of January preceding the 26th, when the Orange-crown was last seen. In this connection the testimony of Mr. Arthur T. Wayne of South Carolina is interesting. Mr. Wayne in 'a general note' of 'The Auk,' (Vol. XXII, October, 1905, p. 417), states "The Orange-crowned Warbler is capable of enduring intense cold. I have seen numbers of these highly interesting birds near Charleston when the thermometer ranged as low as 8° above zero." Mr. Wayne further states "The Orange-crowned Warbler *winters abundantly* [the italics are his] on the coast of South Carolina, and it arrives from the northwest the last week in October and remains until the first week in April, or perhaps even later." In a letter recently received from Mr. Wayne he confirms these statements, saying that it winters regularly in the region of Charleston, but that more are seen in some winters than in others, that the species arrives there about October 30, the earliest record, and remains until the second week in April.

Other records than those already given which have been furnished me are:

One seen by Miss Blanche Kendall feeding on the suet in her yard in Brookline on January 4, 1901. Miss Kendall writes me, "The bird was here frequently through January and February," and states that there was difficulty at the time about its identification, but later it was determined with certainty to be an Orange-crown. Mr. Frederic H. Kennard saw the bird on February 11 and gives confirmation as to its identity.

One seen by Dr. C. W. Townsend and Dr. Glover M. Allen at the border of the Virginia Wood in the Middlesex Fells, Melrose, on November 29, 1906. This bird had been seen by Mrs. L. E. Bridge on the 26th.

One seen by Mrs. Bridge in West Medford on October 3, 1909.

One seen by Mr. Barron Brainerd and his father, Dr. Brainerd, in Olmsted Park, Brookline, on November 25, 1909, when the "sky was overcast and drizzling," following "a day with a north-east gale accompanied by sleet." The bird's call was noted as "stweep."

One seen by Mrs. Elizabeth M. Dunham in Auburndale, December 20, 1909, which, Mrs. Dunham states, "came into an apple tree close by a window where I was feeding some Chickadees, and remained some minutes."

One seen by Mr. H. L. Barrett in the Arborway, Jamaica Plain, not far from Jamaica Pond, Boston, November 19, 1911.

One seen by Mr. Barrett in Jamaica Plain on December 16, 1912.

One seen by Mr. Barrett beside Scarboro Pond in Franklin Park, Boston, with Mr. Ralph M. Harrington on November 15, 1914.

One seen by Miss E. D. Boardman at West Manchester on the North Shore, October 29, 1915, "near my bird bath."

These records make a contribution of nine more to the number for this vicinity, two in October, four in November, and three additional winter records, namely, December 16, 20, and January-February. Combining the records now presented in the several groups given, we find that, beginning with the year 1908, in the last eight years no year is without a record: 1908 and 1910 each have two records; 1911, 1912, 1913, each have one; 1909 and 1914 each have three; 1915 has six. In the years previous to 1908 there are two records in 1905, one each in 1904 and in 1901, three in 1900, three in 1891, and one in 1885, all these being the records of Mr. Brewster, except the 1901 Brookline bird and the 1905 Abington bird. So the appearance of the Orange-crowned Warbler in this vicinity, based upon records, may be said to have been more regular in the last eight years than in the twenty-three years preceding, although the increase of intelligent observers afield in the more recent years may in part account for the difference.

The oft-repeated presence of the Orange-crowned Warbler in the region of Boston in November, eighteen occurrences have been presented, together with its several recent recorded appearances in December and January, ten in number, whereas there are fewer September and October records, indicates that they are mostly the very late migrating birds which reach this section. As the species is a summer resident of the far northwest, Manitoba to Alaska, and its fall migration to the Atlantic Coast is southeasterly, passing, however, mostly west of the Alleghanies to the South Atlantic and Gulf States, the individuals which reach New Eng-

land have evidently proceeded on a more northerly route, in the course of which some at least seem to occupy more time in their migratory passage to the coast line.

And it would appear that the coast line is their ultimate goal, since I can learn of no late fall or winter records of the species in the interior of New England nor for the State of New York. Mr. Eaton in his 'Birds of New York' states "In the fall, migration takes place between the 25th of September and the 12th of October." And Mr. James H. Fleming in an article on the Birds of Toronto, Canada, testifies that it is a "regular migrant, rare, May 7 to 15 and probably later (May 27, 1888, Hamilton, Ontario); in the fall, October 6 to 10." And he further states "I have the records of only eight in eight years," (Auk, Vol. XXIV, Jan., 1907, p. 71).

It would appear, therefore, from such testimony as we have that the species leaves the interior before the middle of October and that the individuals which reach the seacoast at Boston and vicinity in November and later show a disposition to linger and even to winter here. This is the case of the Myrtle Warbler (*Dendroica coronata*) in its southward migration, the records of which show that as a wintering bird the species confines itself quite closely to the coast line after the period of its general migration. So hereabouts we do not obtain winter records of the Myrtle Warbler in territory lying much back from the immediate coast line, while the species is a regular winter resident in considerable numbers in towns along the shores of Massachusetts, showing hardiness in the very low temperatures which occasionally occur here, when the mercury falls to zero or below zero.

In this connection Mr. Wayne of South Carolina may again be quoted. In 'The Auk' for January, 1886, p. 138, Mr. Wayne states that he secured his first specimen of Orange-crowned Warbler on November 29, 1884, that the bird was shot on Sullivan's Island, which is "about six miles long and seven miles from Charleston, directly on the Atlantic Ocean." . . . "This warbler," he writes, "is a late autumnal migrant, . . . wintering in small numbers, especially on Sullivan's Island, as nearly all my specimens were taken on that island. They were all shot from myrtle bushes and invariably fell, when shot, into the water. I, therefore, consider this species strictly maritime when in South Carolina. . . . I have

failed to find the species five miles from Charleston away from the coast, but have taken it nine miles from Charleston on the coast. I have taken specimens in November, December, January, February, and March. The bird appears to migrate early in the Spring. . . . I have taken males in January with the crown bright orange. . . . I secured in all about fifteen specimens during the winter of 1884." Mr. Wayne found his birds "always keeping in the thickest bushes, searching for worms and larvæ amongst the dead leaves." Mr. Wayne again refers to the species as maritime in 'The Auk,' Vol. XXII, Oct., 1905, p. 417, where he states "The centre of abundance of these warblers [*V. celata*] is on the coast islands, as the greater part of these islands are veritable jungles, which the Orange-crowned Warbler delights to inhabit."

In view of Mr. Wayne's testimony for South Carolina and of the Boston Region records it is quite surprising, therefore, to find in 'The Auk' for January, 1916, Vol. XXXIII, p. 78, a 'general note' by Mr. J. T. Nichols and Mr. Ludlow Griscom of New York, which states "On January 3, 1915, we discovered an Orange-crowned Warbler in some live oaks on Monkey Island, Carritucket Sound [North Carolina]. The bird was collected and proved to be a female. It is now in the collection of the American Museum of Natural History, catalogue no. 123791. Mr. T. Gilbert Pearson informs us that this is the third record for the State." And Mr. C. J. Maynard in his 'Warblers of New England,' published in 1905, also states "The farthest north that I have found it [*V. celata*] in autumn was at New River, North Carolina, where a female, now in my collection, was obtained on November 11, 1900." Mr. Maynard in a letter just received confirms this statement, that this North Carolina specimen in his collection continues to be the most northern individual that he has seen along the Atlantic Coast.

To these very few records for North Carolina may be added two obtained just farther north in Virginia in the autumn: one, that of a fine adult bird taken by Dr. A. K. Fisher on October 13, 1889, while collecting in company with Mr. H. W. Henshaw, at Munson Hill, a locality a few miles from Washington, D. C. Dr. Fisher states "when first seen, it was in a thicket of small alders, blackberries, and thoroughworts, gleaning insects from



among the flowers of the latter plant" (Auk, Vol. VII, January, 1890, p. 96). And Mr. Ellison A. Smyth, Jr., in an article on 'Birds Observed in Montgomery County, Virginia,' furnishes a second record, that of a specimen obtained by him on October 2, at Blacksburg, a "town west of the Blue Ridge Mountains and near the summit of the Alleghany" (Auk, Vol. XXIX, Oct., 1912, p. 523). I find no other records published in the issues of 'The Auk' for these States.

But Dr. Witmer Stone in his 'Birds of Eastern Pennsylvania and New Jersey,' published in 1894, gives five records for that region, namely, one in February, 1860, on Rancocas Creek, N. J. (Turnbull); two in March: one about 1876 at West Philadelphia (McIlvaine) and one on March 22, 1883, at Haddonfield, N. J. (S. N. Rhoads); one on October 6, 1889, at Anglesea, N. J. (P. Laurent); and one on November 2, 1867, in Bucks Co., Pa. (C. D. Wood). These records are supplemented in Dr. Stone's 'Birds of New Jersey' in the Report of the New Jersey State Museum for 1908, p. 271, by two more records, namely, one at Hoboken, May, 1865, by C. S. Galbraith and one at Haddonfield on February 25, 1909, by R. T. Moore (Auk, Vol. XXVIII, Jan., 1910, p. 85). It is further recorded in the Report "John Krider states that he got one in New Jersey in December, when the ground was covered with snow." Here are furnished three distinct winter records for New Jersey and Eastern Pennsylvania, two in February and one in December, while the two March records suggest birds wintering rather than in their spring migration. Dr. Stone terms the Orange-crowned Warbler in New Jersey a "very rare transient visitant, February, March, and October, possibly winter resident in the southernmost counties."

To these records Mr. Richard C. Harlow adds a spring record, namely, "During the spring of 1909 it was my good fortune to be able to establish the occurrence of this bird [Orange-crowned Warbler] at State College, Center County, Pennsylvania. During a late flight of warblers on May 16 I observed several which I took to be Tennessee Warblers, but on collecting a pair of them they were found to be of this species. There were probably six or seven in the flock, and another taken was too mutilated for preservation. When seen the birds were in willows along a small stream in com-



pany with Nashvilles, Northern Parulas, and a few Redstarts. This date is remarkable because of the fact that the few Pennsylvania and New Jersey specimens have almost invariably been taken in late February or early March" (Auk, Vol. XXVIII, April, 1911, p. 268). This flock must have been a part of the general migration of Orange-crowns which takes place at the time named, but passes mostly west of the Alleghanies. The records gathered by Dr. Stone would seem to be those of the few birds which have kept more closely to the coast line.

Proceeding farther north in our survey to New York, where Mr. Eaton in his 'Birds of New York' states "In the fall, migration takes place between the 25th of September and the 12th of October," we find these October records: a female was taken, October 9, 1876, and a second specimen seen on the 29th of the same month by E. P. Bicknell at Riverdale (Bull. N. O. C., vol. IV, 1879, p. 61); a young female was shot near Syracuse, October 2, 1886, by Morris M. Green (Auk, vol. IV, Oct. 1887, p. 350). And Mr. William Dutcher, giving 'Notes on Some Rare Birds in the Collection of the Long Island Historical Society' states concerning *V. celata*, "This specimen was shot on the Eastside lands by Mr. [John] Akhurst [taxidermist, Brooklyn], and is the only one he ever procured. It is in immature plumage and was shown to, and identified by, Mr. George N. Lawrence" (Auk, Vol. X, July, 1893, p. 277). We find also in the same volume an account of a young male bird shot at Flatbush, Kings Co., on October 12, 1892, by Mr. Arthur H. Howell, who states that the Orange-crowned Warbler has never before been recorded from Long Island. Mr. Howell also states that "Dr. Edgar A. Mearns refers to it as a 'rare migrant' in the Hudson River valley" [p. 90].

So the very scattered records for the middle Atlantic Coast States are fewer than those of South Carolina to the South, where the species regularly winters, which would be expected, but are also fewer than those of the Boston Region on the north, which would not naturally be expected.

We have no records as yet, however, of the Orange-crowned Warbler remaining throughout the winter in the Boston Region except that of Miss Kendall in Brookline, where the warbler frequently visited the suet in her yard through January and

February, thus being assisted in procuring its needful supply of food. The species has not yet proven a capacity to cope with the severest conditions of weather which visit this region. The January 19, and 23 bird at Abington in 1905 and the January 10 and 26 bird at Fresh Pond, Cambridge, in 1916 seemed to be showing such a capacity, as they had already endured milder winter conditions, but they passed from our ken when the weather conditions became severer, as was the case after the last obtained record of each of these birds. I believe the consensus of opinion is that a migrating bird having remained in the north into the month of January is not likely to have the instinct of migration carry it to its more usual winter range, but will seek a living where it is, or, may be, wander simply in its search for food. So this 1916 bird may still be somewhere in the vicinity, if mishap have not overtaken it, which with regret we must say is quite too likely. The vicinity of Boston, however, appears to mark the northern limit of the appearance of the species in the east in the fall and winter, as the absence of Maine, New Hampshire, and Vermont records indicates.

Two instances of quite accidental occurrence of other warblers in this region in the winter may be cited as of interest in this connection. Dr. Walter Faxon gives me that of a Nashville Warbler (*Vermivora rubricapilla*) found by him dead in Swampscott, January 31, 1890. This bird was found "with its neck broken and wedged between two twigs of a barberry bush — clearly the work of a Shrike. Mr. Brewster, who now has the bird's skin, was sure that it could not have been dead over two weeks. In the stomach were many land snail shells" (Auk, Vol. VII, 1890, p. 409). And there was an occurrence of a Palm Warbler (*Dendroica palmarum palmarum*) remaining in the Arnold Arboretum at Jamaica Plain from November 26, 1911, to January 3, 1912, seen by myself and other observers (Auk, Vol. XXIX, April, 1912, p. 247). And 'Bird-Lore' gives the record of a Blue-winged Warbler (*Vermivora pinus*) found dead in the Bronx Park, New York, January 6, 1900, by Mrs. Elizabeth G. Britton, which "evidently starved to death." Mr. Chapman in a note on this occurrence states that the bird was presented to the American Museum; that it is apparently a female and its plumage is in fresh

and unworn condition; that the Blue-wing is not only one of the first of our summer residents to leave, it being rarely observed after September 5, but that it winters south of the United States; that on one occasion the mercury had registered 8°; and that probably the well-known habit of the species of searching for food in bunches of dead leaves and similar situations had enabled it to live where a flycatching warbler would long before have died" (vol. II, p. 26). As the winter range of these three species according to Chapman (Warblers of North America) is southern Texas to southern Mexico for *V. rubricapilla*, Florida southward to the West Indies for *D. palmarum*, and northern Mexico to Colombia for *V. pinus*, the occurrences would seem to have been purely accidental, while the fact that the usual winter range of the Orange-crowned Warbler reaches as far north as Charleston, South Carolina, where temperatures as low as 8° occur without being fatal to it, makes it appear quite possible and not improbable that the Orange-crown may have the hardiness to be a winter resident as far north as Boston, since records of winter visitants have now been obtained in five of the last eleven years, four of these years being 1909, 1910, 1912, and 1915, three individuals in 1915.

The Orange-crowned Warbler is much rarer in the spring migration in New England. As the general route of the species northward is through the Mississippi valley, the individuals which follow more closely the coast line, passing east of the Alleghanies, are few in number. The records of birds thus reaching New England, so far as they have been obtained, number but five, one each in the years 1863, 1876, 1888, 1891, 1892, on May 15, 16, 8, 9, 17 respectively. And I find but two Eastern New York and New Jersey occurrences for May, namely, a Highland Falls, N. Y., record in 1875 (Bull. N. O. C., 1878, p. 46), and a Hoboken, N. J., record for 1865 (Auk, Vol. X, Jan., 1893, p. 90). Montreal has one record, that of a bird shot on May 21, 1890, by Mr. Ernest D. Wintle (Auk, Vol. VIII, July, 1890, p. 290). Therefore, the species is a very rare transient visitant in the spring in the whole northeastern section of the United States, so far as published records show. It is, however, a spring migrant in western New York, where, Mr. Eaton testifies, "it is a regular migrant, though in small numbers, in the spring, arriving from the 12th to the 17th

of May, and disappears from the 18th to the 21st." Thence westward it is less uncommon. "There are no breeding records for Canada in Ontario or eastward," Mr. Chapman states in 'Warblers of North America,' p. 87.

In its fall migration the Orange-crowned Warbler as a species seeking the coast line also shows a marked preference for the shores of ponds and vicinity of brooks, the records indicate, also for low shrubbery. It is readily distinguished from the Kinglets, both Golden-crowned and Ruby-crowned, by its having no wing-bars, and from the former by not showing its orange crown and having no definite head markings, by its yellowish underparts, dull in color, but distinctly yellow, and by its larger size. I have found the eye-ring and superciliary line to be very obscure, while the Ruby-crown's eye-ring is conspicuous. The call-note is also distinctive. It most nearly resembles the Nashville Warbler in plumage, but it is differentiated from that species by its dusky greenish yellow underparts which are obscurely streaked. And as the Nashville Warbler would be an extraordinary occurrence in late November, in December, and in January in New England, the very late migrating warblers which reach the Boston Region, other than Myrtle Warblers, may be expected to prove to be Orange-crowns, and not Nashvilles, and if they conform to color tests may fairly be so regarded without examination in the hand.

As to the crown of this species in life, Mr. Wayne in his letter recently received states "The orange patch is, of course, basal and is *always* concealed by the tips of the feathers. I can only tell an adult at large by the color of the underparts, as the crown spot is never discernible while the bird is at large — hence the specific name *celata*. In breeding plumage, that is, summer, the tips of the feathers are worn away by abrasion, and the crown is not at that season absolutely concealed. In winter and early spring the crown patch is only visible upon examination. I have yet to see the bird display its crown patch, even when chasing the female in March and April, and I am pretty sure I have seen over 500 specimens in South Carolina since 1886, not to mention the number I have encountered in various portions of Florida. The Orange-crowned Warbler *never* displays its crown patch while here in winter or early spring, like the Ruby and Golden-crowned Kinglets."

Of his specimens Mr. Wayne says "The orange patch is present in *both* sexes, but is more intense and pronounced in the males. I have some superb old males with the entire crown deep orange; the forehead is the only part which lacks this color." Mr. Brewster also states that he has never seen the concealed crown patch shown by a living bird, "although conspicuous enough," he writes, "in cabinet specimens of males taken in spring, when the plumage of the crown is but slightly disarranged. All such specimens have it in profusion; nor is it always wanting in spring females, although none of mine have more than a comparatively slight suffusion of it, and most lack it altogether. With males taken in autumn (September to November) and winter (December to February) it is almost or quite as profuse and richly colored as in spring ones, in what I take to be fully adult males, but much more dull and restricted in amount with those presumably immature, and with some of these nearly or quite absent altogether." Mr. Brewster regards this concealed color of the crown as "not orange at all" and says that to his eye "it has a more or less decided tinge of dull or pale chestnut." Mr. Brewster has very kindly undertaken for me a careful examination of a large series of skins which he possesses, which includes many specimens collected by Mr. Wayne near Charleston, S. C., in December, January, and February.

The records of the Orange-crowned Warbler for the fall and winter of 1915-1916, surpassing former seasons in their number, together with those of other recent years, strengthen the view that the species may be becoming a more regular and less rare fall migrant in this region and that it is manifesting a disposition to be a winter visitant, if not, indeed, a winter resident.

## BIRDS OF THE CHILLIWACK DISTRICT, B. C.

BY MAJOR ALLAN BROOKS.

THIS list should have been published many years ago. In presenting it at this late date the writer is influenced largely by the discrepancies of ranges given in the A. O. U. Check-List of 1910.

The compilers of this list were evidently under the delusion that Chilliwack was in southeastern British Columbia instead of extreme southwestern, west of all the mountain ranges, with nothing but fifty miles of level country between its western boundary (Sumas Lake) and the sea.

The area covered by the present list includes the Chilliwack and Sumas valleys, a wide alluvial flat, originally mostly forest country, on the south bank of the Fraser River, a district about thirty miles by eight at its widest part.

The Fraser River here bursts through the wall of the Cascade Range, forming a precipitous cañon about one hundred miles in length, running nearly north and south. However improbable it may appear this cañon must represent the route to the valley of many of its summer residents, which must return towards the south through its gloomy length after passing up the east side of the Cascade Range on their northward migration.

Also included in the list are the birds of the Cascade summits to the east of the valley, including the valley of the Chilliwack (or Chilliweyuk) River and Chilliweyuk Lake, the former a mountain torrent rising in the latter and flowing through a deep cleft in the Cascades for the greater portion of its course.

The town of Chilliwack is some seventy feet above sea level, the Fraser River being influenced by high tides as far up as Sumas, some eight miles down stream.

The valley is extremely flat and at one time mostly heavy forest of Douglas fir, cedar, and hemlock with a sprinkling of large leaf maple and heavy underbrush. The banks of the rivers sustain a heavy growth of cottonwood, alder and willow. Much of the primeval forest has suffered by fire and only the blackened shells



of the gigantic cedars remain, and the land then supports a dense growth of large alder, willow and maple.

Sumas Prairie, mentioned so often by John Keast Lord, is a flat alluvial plain covered with natural grass and intersected by many winding sloughs, the whole being under water at the time of the rise of the Fraser River in June and July.

Sumas Lake is the western boundary of the district — a very shallow body of water without vegetation, and at the time of extreme low water in mid-winter almost without water.

The Cascade Mountains rise for the most part like a wall from the floor of the valley, the peaks being from 6000 to 8000 feet altitude. The flanks of the mountains were clothed originally in a continuous coniferous forest, but this has been for the most part swept by fire, resulting in a dreary tangle of dead trees both standing and fallen, with a dense second growth of the typical Pacific slope character — a region singularly destitute of bird and animal life.

The Coast Range ends on the north bank of the Fraser, only two small isolated mountains of 2000 and 3500 feet elevation rising to the south of that river.

The district lies well within the humid coast belt, the average yearly precipitation being about fifty inches. Winters are very irregular, occasionally there may be one without any severe frost, but in most winters there occur two or three periods of severe cold when the temperature drops to near zero, accompanied by a howling north wind which invariably lasts for three days or more without cessation. The coldest recorded temperature was in the winter of 1908-09, when the thermometer registered thirteen below zero. Snow does not usually lie for long in the valley. On the mountain summits it sometimes attains a depth of thirty feet, and persists in patches on the highest peaks throughout the summer.

About the end of June, and in some years early in the month, the Fraser, swollen with the snows of the far interior, overflows its banks and inundates a large portion of the valley, drowning out the nests of many of the ground-nesting birds. Of late years much dyking has been done, but to balance this most of the marshes have been drained so the region will never accommodate breeding waterfowl to any extent. The bulk of the land is now cleared and given over to intensive agriculture.

In May, 1887, I arrived in this region with my father, the late W. E. Brooks, who had bought a farm close to the village of Chilliwack. I was then eighteen years of age and chuck full of enthusiasm. All my spare time in the intervals of ranch work was devoted to ornithology, and aided by my father the valley was worked in a systematic manner. After four years, my father sold his ranch and returned to the east and the writer took up zoological collecting as a profession.

Most of his subsequent bird collections went to the museum of Mr. William Brewster and later a good deal of material was supplied to Mr. Outram Bangs and to Drs. Dwight and Bishop, while working out the fauna of British Columbia in this and other portions of the Province.

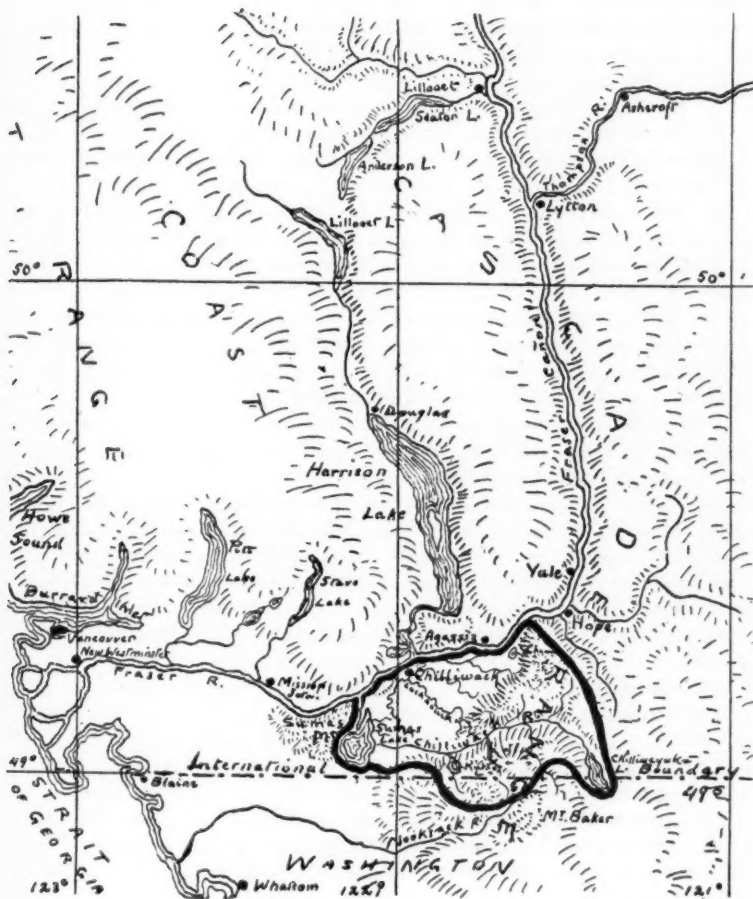
From 1894 when I returned to the west after a year or two in Ontario, most of my time was taken up in mammal collecting, some sixty species being recorded from the Chilliwack region, but a careful lookout was always kept for new birds. In all about eleven years were spent in this district resulting in the region being more thoroughly worked ornithologically than any other portion of the Province.

The sketch map which accompanies this list indicates the position of the locality. The region enclosed in the heavy black line embraces the entire area in which the observations here recorded were made. Species of which no specimens were taken or examined by the writer are preceded by an asterisk. It will be seen that there are only four in this category out of a total of 257.

In conclusion I must acknowledge my deep indebtedness to Messrs. Brewster, Ridgway, and Oberholser, and to Drs. Dwight and Bishop for their painstaking care in comparing and indentifying closely allied subspecies for me.

#### LIST OF THE BIRDS OF CHILLIWACK, B. C.

1. *Æchmophorus occidentalis*. WESTERN GREBE.—Common migrant.
2. *Colymbus holboëlli*. HOLBELL'S GREBE.—Fairly common migrant and may breed in the Harrison Lake district to the north.
3. *Colymbus auritus*. HORNED GREBE.—Common migrant.



4. *Colymbus nigricollis californicus*. EARED GREBE.— Only once taken.

5. *Podilymbus podiceps*. PIED-BILLED GREBE.— Rather scarce resident. A few remained throughout the severe winter of 1908-'09, though in one case a bird must have survived underneath the ice of a frozen slough for about three weeks. There was probably plenty of air space where the water had fallen after the ice had formed.

6. *Gavia immer*. LOON.— Fairly common and breeds.

7. *Gavia pacifica*. PACIFIC LOON.— Straggler, only one taken.

8. *Gavia stellata*. RED-THROATED LOON.— A bird in full summer plumage in the shop of Mr. Wm. Hall in 1887, which was killed in the vicinity.

9. *Stercorarius longicaudus*. LONG-TAILED JAEGER.— I shot a fine white-breasted adult August 23, 1890, at Sumas Lake, and at other times saw several others, nearly always in September. This Jaeger certainly migrates overland as I have seen it doing so on several occasions — once in the Rocky Mountains. I have not yet seen it on the coast where the Parasitic Jaeger is common. The contents of the stomach of a young bird killed in September consisted mainly of half digested *Empetrum* berries indicating a very recent sojourn on the tundras.

10. *Larus glaucescens*. GLAUCOUS-WINGED GULL.— The commonest gull, ascending the smallest streams at the time of the salmon run and perching freely on tall dead trees.

11. *Larus argentatus*. HERRING GULL.— Much scarcer than the last. All the records so far published of *Larus occidentalis* for British Columbia refer to this gull. I had almost come to the conclusion that *occidentalis* had no right to a place on the British Columbian list when I came across the skin of a moulting adult in the Geological Survey's Collection at Ottawa, collected by Spreadborough on the south end of Vancouver Island.

12. *Larus californicus*. CALIFORNIA GULL. Scarce migrant.

13. *Larus delawarensis*. RING-BILLED GULL. Fairly common migrant.

14. *Larus brachyrhynchus*. SHORT-BILLED GULL. — At times abundant.

15. *Larus philadelphia*. BONAPARTE'S GULL.— Common migrant.

16. *Hydrochelidon nigra surinamensis*. BLACK TERN.— Two adults seen and one taken June, 1897, and one juvenal seen Sept. 1, 1899, all at Sumas Lake.

17. *Pelecanus erythrorhynchos*. WHITE PELICAN.— A straggler to Sumas Lake, usually seen in June or July at the time of the highest water.

18. *Merganser americanus*. AMERICAN MERGANSER.— Common resident.

19. *Merganser serrator*. RED-BREADED MERGANSER.— Scarce migrant in the late autumn and again in May.

20. *Lophodytes cucullatus*. HOODED MERGANSER.— Common resi-

dent. Both this species and the Goosander being tree nesting ducks do not suffer from the summer floods so disastrous to most of the ducks in the Fraser Valley.

21. *Anas platyrhynchos*. MALLARD.—An abundant resident.

22. *Chaulelasmus streperus*. GADWALL.—Scarce. I have seen the Gadwall at Sumas in June and July, but doubt if it breeds. A few remain all winter.

23. *Mareca americana*. BALDPATE.—Common resident and I think a few breed in the valley — or used to.

24. *Nettion carolinense*. GREEN-WINGED TEAL.—Common resident — breeds.

25. *Querquedula discors*. BLUE-WINGED TEAL.—The Blue-wing used to be a fairly common summer resident — very common in 1887 — but by far the greater portion of the nests were destroyed each year by the rise of the Fraser River in June. The last I saw was an adult male in June, 1896.

26. *Querquedula cyanoptera*. CINNAMON TEAL.—The Cinnamon Teal used to be common in the eighties, in fact, after the Mallard, the commonest breeding duck. Now very scarce on account of their nests being annually drowned out by the Fraser River floods. If the birds reared second broods they fell easy victims to duck shooters as the young, as a rule, could not fly when the season opened.

27. *Spatula clypeata*. SHOVELLER.—The Shoveller used to be a common breeder, now only a migrant owing to the draining of the upland swamps and the inundating of the lowlands. Two remained throughout the winter of '89-'90.

28. *Dafla acuta*. PINTAIL.—Common, resident, and used to breed.

29. *Aix sponsa*. WOOD DUCK.—The Wood Duck was rather scarce when I first came to British Columbia in 1887, becoming more common every year up to about '95 when it was very abundant. It has since decreased but is still a regular breeder in the Fraser Valley. Three remained throughout the winter of '89-'90, and I saw one in February, 1900, during exceptionally severe weather.

30. *Marila americana*. REDHEAD.—Scarce migrant. Four records.

31. *Marila vallisineria*. CANVAS-BACK.—Irregular migrant, sometimes common.

32. *Marila marila*. SCAUP.—Rather scarce winter visitant.

33. *Marila affinis*. LESSER SCAUP.—More common than the last.

34. *Marila collaris*. RING-NECKED DUCK.—Fairly common. One breeding record.

35. *Clangula clangula americana*. GOLDEN-EYE.—Common and possibly a pair or two may sometimes breed in the valley.

36. *Clangula islandica*. BARROW'S GOLDEN-EYE.—I only shot one undoubted Barrow's Golden-eye, but the species must be fairly frequent as it is a common breeder on the other side of the Cascades. At the time of my residence in this district I relied on the pattern of wing and color of

bill to distinguish the females and young males of the two Golden-eyes and undoubtedly passed over many Barrow's, as these characters are useless in determining the species.

37. *Charitonetta albeola*. BUFFLE-HEAD.— Common. One breeding record at Sumas Lake where I saw a female and three half grown young.

38. *Harelda hyemalis*. OLD-SQUAW.— I shot two females at Sumas Lake, November, 1894.

39. *Histrionicus histrionicus*. HARLEQUIN.— A number of pairs breed in the mountain streams tributary to the Chilliwack River. Never seen in fall or winter.

40. *Oidemia deglandi*. WHITE-WINGED SCOTER.—

41. *Oidemia perspicillata*. SURF SCOTER.— Huge flocks of Scoters pass through in May and early June, nearly all White-winged Scoters.

42. *Erismatura jamaicensis*. RUDDY DUCK.— Scarce migrant.

43. *Chen hyperboreus hyperboreus*. SNOW GOOSE.— Rather rare migrant.

44. *Anser albifrons gambeli*. WHITE-FRONTED GOOSE.— Usually scarce, but numerous in the fall of 1904, and possibly a few remained all winter. Latest spring record June 3.

45. *Branta canadensis canadensis*. CANADA GOOSE.— Common; remains throughout the coldest winters and a few can be seen on Sumas prairie all summer, but do not breed. I think it breeds at Chilliweyuk Lake at the head of the Chilliweyuk (or Chilliwack) River.

In the winter and early spring are seen flocks of a dark form of this species. At first I took these for *occidentalis* but the size and measurements of those shot were fully up to the maximum of *canadensis*. Several times I have had flocks of the light and dark "Honkers" feeding just out of gunshot of me and keeping apart from each other. The underparts of the dark form are often as dark as the upper surface and abruptly defined against the white of the ventral region. This is probably the breeding bird of the coast strip to the northward.

46. *Branta canadensis hutchinsi*. HUTCHINS' GOOSE.— Common and at times very abundant but getting scarcer, though few are killed. The vast flocks that used to remain on Sumas Lake and prairie every fall and spring mostly pass over now, as they are too much disturbed. A few remain with the "Honkers" all winter and one or two can usually be found throughout the summer, but of course do not breed.

Of the large numbers of Geese I have shot or handled I have never seen one that could in any way be called an intergrade between *canadensis* and *hutchinsi*, nor have I, once that I was well acquainted with the *minima*, seen an intergrade between that bird and *hutchinsi*, and I am convinced that when these three birds are carefully studied they will each be found entitled to full specific rank.

47. *Branta canadensis minima*. CACKLING GOOSE.— For long I mistook small dark birds of the preceding species for Cackling Geese but when I did get the real bird I found it easy to distinguish in the flesh.



It is not common in the valley and I have only taken it in the fall. I have also shot it east of the Cascades. Mr. Brewster wrote me when I sent him typical *minima* that they were the first undoubted examples of that bird he had received, and that he believed the majority of skins in other collections labeled *minima* were only *hutchinsi*.

48. **Olor columbianus.** WHISTLING SWAN.— At times large numbers visit Sumas Lake usually in the late fall. I found they decoyed very readily to an imitation of their call.

49. **Olor buccinator.** TRUMPETER SWAN.— Much scarcer than the last and I have only shot one in this district.

50. **Olor sp?**— In the spring of 1890 I examined a mounted swan in the shop of Mr. Wm. Hall that had been killed the preceding winter on Sumas Lake. It was an adult, a very small bird with the basal third of the bill yellow. I took it for the Whistling Swan. The other swans I had handled up to this time were considerably larger and had no yellow at the base of the bill. There was one of these in Mr. Hall's shop at the same time. Later I found that these black-billed Swans were only Whistlers as I did not shoot the true Trumpeter until the spring of 1895.

On November 5, 1894, large numbers of Whistling Swans were on Sumas Lake — about a dozen large flocks. Near them but always keeping separate were three swans of a very much smaller size, an adult and two young.

The cygnets were very dark, the necks especially so. On the mud flat at a little distance one only saw the white bird. I spent the entire day trying to get a shot at these. Ultimately I got up to within about two hundred yards and after watching the birds through my glass for a little while I fired and missed them, the bullet ploughing up the mud under the adult. Next day the Whistlers were still on the lake but the small swans had gone. Several times I had the latter in view close to a flock of Whistlers and the difference in size was very noticeable, also there were no cygnets among the Whistlers anything like as dark as the small swans. There is no doubt that these small birds, as well as the bird in Hall's shop (which I was later unable to trace), belonged to one of the small Asiatic species.

Swans have been protected at all seasons in British Columbia for the last ten years or so, so it is doubtful if a specimen of this interesting straggler will ever be taken in the Province.

51. **Plegadis guarana.** WHITE-FACED GLOSSY IBIS.— One specimen, a young bird, was shot some time in the summer of 1902 on the Luck-a-cuck River. This bird is now in the museum at Victoria.

52. **Botaurus lentiginosus.** BITTERN.— Common summer resident. I have seen several in mid-winter about 50 miles down the Fraser River from Sumas.

53. **Ardea herodias fannini.** NORTHWESTERN HERON.— Common resident but did not breed in the valley in my time. Mr. Outram Bangs informs me that skins I sent to him were typical of this form.

54. **Grus canadensis.** LITTLE BROWN CRANE.— Spring and fall migrant.

55. *Grus mexicana*. SANDHILL CRANE.— The large Crane bred regularly in a cranberry bog at Sumas up to 1902. It still breeds near the city of New Westminster in the large cranberry bogs.

56. *Rallus virginianus*. VIRGINIA RAIL.— Permanent resident. Scarce.

57. *Porzana carolina*. SORA.— Summer resident only. More common than the last.

58. *Fulica americana*. COOT.— Spring and fall migrant.

59. *Lobipes lobatus*. NORTHERN PHALAROPE.— Common fall migrant, never seen in the spring.

60. *\*Steganopus tricolor*. WILSON'S PHALAROPE.— On September 9, 1888, a large Phalarope which I took to be this species flew low over my head and settled in a swampy stream where it swam about in regular phalarope fashion.

61. *Gallinago delicata*. WILSON'S SNIPE.— Common resident — a few breed.

62. *Macrorhamphus scolopaceus*. LONG-BILLED DOWITCHER.— Common in fall. Very rare in spring.

63. *Micropalama himantopus*. STILT SANDPIPER.— Two birds of the year taken at Sumas Lake August 19, 1899.

64. *Tringa canutus*. KNOT.— Only once seen when I shot a young bird at Sumas Lake in August, 1890.

65. *Pisobia maculata*. PECTORAL SANDPIPER.— Common in fall and rare in spring.

66. *Pisobia bairdi*. BAIRD'S SANDPIPER.— Common, often in very large flocks, in fall. Rare in spring. I have never taken an adult in the fall to my knowledge.

67. *Pisobia minutilla*. LEAST SANDPIPER.— Common in fall and one of the few sandpipers that visit the valley regularly in spring.

68. *Pelidna alpina sakhalina*. RED-BACKED SANDPIPER.— The last sandpiper to arrive in the fall and remains all winter on Sumas Lake, though driven to the sea coast in very severe weather.

69. *Ereunetes pusillus*. SEMIPALMATED SANDPIPER.— Although I have sent numbers of this Sandpiper back to the large eastern collections, and yearly recorded it as a regular migrant, it is still quoted (A. O. U. Check-List, 1910) as "casual" in British Columbia. It is a tolerably common and regular fall migrant to the valley, arriving late in July, some two weeks before the next species. East of the Cascades it is the common *Ereunetes* outnumbering *mauri* one hundred to one.

70. *Ereunetes mauri*. WESTERN SANDPIPER.— Common in fall and rare in spring. In life this is a very different bird from *pusillus*; in that species the bill is straight or turns slightly upward like a Knot's or a Sanderling's. In *mauri* the bill turns slightly but pronouncedly downwards, like a miniature of the Red-backed Sandpiper. In fact in life the Western Sandpiper bears a stronger resemblance to the Least Sandpiper than to its close ally the Semipalmated.

71. *Calidris leucophæa*. SANDERLING.—Scarce fall migrant.
72. *Totanus melanoleucus*. GREATER YELLOW-LEGS.—Common migrant. Arrives early in spring.
73. *Totanus flavipes*. LESSER YELLOW-LEGS.—Common in fall. I have no spring record.
74. *Helodromas solitarius solitarius*. SOLITARY SANDPIPER.—
75. *Helodromas solitarius cinnamomeus*. WESTERN SOLITARY SANDPIPER.—Both forms of the Solitary Sandpiper occur, though the latter is the more numerous. Both are regular and fairly common in fall but rarely seen in spring.
76. *Tryngites subruficollis*. BUFF-BREASTED SANDPIPER.—Scarce fall migrant. I have taken it about six times in August and September. I have never seen more than three together.
77. *Actitis macularia*. SPOTTED SANDPIPER.—Common. A few breed. A very late record for this latitude is December 3, 1895.
78. \* *Numenius americanus*. LONG-BILLED CURLEW.—I have only seen this bird four times, always in April.
79. *Squatarola squatarola*. BLACK-BELLIED PLOVER.—Common in fall, only once seen in spring.
80. *Charadrius dominicus dominicus*. GOLDEN PLOVER.—Common in fall, but only two spring records.
81. *Oxyechus vociferus*. KILLDEER.—Common, a few remain all winter.
82. *Ægialitis semipalmata*. SEMIPALMATED PLOVER.—I have taken this three times in the fall.
83. *Arenaria interpres morinella*. RUDDY TURNSTONE.—One record, Sumas Lake, August 19, 1899.
84. *Dendragapus obscurus fuliginosus*. SOOTY GROUSE.—Confined to the foothills and mountains.
85. *Bonasa umbellus togata*. CANADA RUFFED GROUSE.—
86. *Bonasa umbellus sabini*. OREGON RUFFED GROUSE.—Typical examples of both forms occur as well as every possible intergrade. I have never seen the Ruffed Grouse above 2000 feet on the coast. In the interior it ascends at least to 6000 feet.
87. *Lagopus leucurus leucurus*. WHITE-TAILED PTARMIGAN.—Found on nearly all the high peaks of the Cascades to the east.
88. *Columba fasciata*. BAND-TAILED PIGEON.—Common, arrives in April (once in March) and leaves early in October. I have seen it in flocks in September at timber line on the high peaks feeding on *Vaccinium* berries.
89. *Zenaidura macroura carolinensis*. MOURNING DOVE.—Rather scarce. Breeds.
90. *Cathartes aura septentrionalis*. TURKEY VULTURE.—Common summer resident.
91. *Circus hudsonius*. MARSH HAWK.—Common resident.
92. *Accipiter velox*. SHARP-SHINNED HAWK.—Common. I have

found it breeding on the floor of the valley as well as in the mountains. Sometimes seen in midwinter.

93. **Accipiter cooperi.** COOPER'S HAWK.—Common and probably breeds.

94. **Astur atricapillus atricapillus.** GOSHAWK.—I find it very hard to distinguish adults of the two subspecies of Goshawk, but extremes of the young are very different, and I have killed several juveniles that were typical of this form — one, an extremely light colored female, the lightest Goshawk I ever saw in juvenile plumage.

95. **Astur atricapillus striatulus.** WESTERN GOSHAWK.—More common than the last, but I have never found Goshawks breeding in this district though they should do so. There was an invasion of Goshawks the winter of 1888-89, when they were very common — mostly adults.

96. **Buteo borealis calurus.** WESTERN RED-TAIL.—Tolerably common resident.

97. \* **Buteo lineatus elegans.** RED-BELLIED HAWK.—I have only sight records for this species, two of these were at short range when the conspicuous markings of the under surface of the wings and tail were plainly seen and left no doubt in my mind as I am familiar with the eastern race.

98. **Buteo swainsoni.** SWAINSON'S HAWK.—Seldom seen in the valley but a common breeder in the park like country below timber line in the Cascades. I once observed a remarkable migration of Swainson's Hawk at Chilliwack in the spring of 1889. Hundreds of the birds were wheeling slowly about at various elevations and slowly drawing away to the northward. The flight lasted for about five hours. Nine-tenths of the birds were of the melanistic phase (as are all the breeding birds in the mountains). The hawks were accompanied by a few Herring Gulls in adult plumage.

99. **Archibuteo lagopus sancti-johannis.** ROUGH-LEGGED HAWK.—Irregular migrant, sometimes fairly common. A few usually remain all winter on Sumas Prairie.

100. **Aquila chrysaetos.** GOLDEN EAGLE.—Winter visitant to the valley, breeding in the high mountains only.

101. **Haliaetus leucocephalus alascanus.** NORTHERN BALD EAGLE.—Tolerably common resident.

102. **Falco rusticolus rusticolus.** GRAY GYRFALCON.—One record only, an adult female shot by my father, February 14, 1890, on Sumas Prairie. This bird chased a Mallard that I had hit very hard. But before the Falcon made its final stoop the Mallard fell dead. The Falcon settled on the turf beside it but would not carry off its prize, or even touch it, though I kept hidden about a hundred yards away, and it eventually flew off and fell to my father's gun later in the day. This bird is now in the collection of Mr. William Brewster, who says of it "not quite typical (a trifle too dark), but much nearer to this form than to any other."

103. **Falco rusticolus gyrfalco.** GYRFALCON.—A regular winter visitant to Sumas prairie where I have taken several specimens. Two of

these in Mr. Brewster's museum he identifies as typical *gyrfalco*. Gyr-falcons arrive in November, usually about the 8th. The latest date I have seen one was March 7. They prey entirely on ducks and the smaller geese. It was seldom that there was more than one on the prairie at a time, and the smaller falcons worried them continually. I once saw a Prairie Falcon badger a Gyr-falcon for about two hours following it from tree to tree and striking at it continually.

104. **Falco mexicanus**. PRAIRIE FALCON.—At one time a regular fall and winter visitant, though always scarce. Of late years very rare. Last one taken July 27, 1896, a young bird.

105. **Falco peregrinus anatum**. PEREGRINE FALCON.—Scarce migrant. I have seen, but not taken, two or three very dark birds that may have been *pealei*. Young birds of those taken though dark had the light edging to the feathers of the upper surface typical of *anatum*.

106. **Falco columbarius columbarius**. PIGEON HAWK.—

107. **Falco columbarius suckleyi**. BLACK MERLIN.—

108. **Falco columbarius richardsoni**. RICHARDSON'S MERLIN.—Of the three Merlins *suckleyi* was the commonest, then *columbarius*, with *richardsoni* rare, only two of the latter taken and one of these not quite typical. Out of about thirty birds taken I saw no intergrades between *columbarius* and *suckleyi*. Since then I have taken two intergrades east of the Cascades. The Black Merlin is the only subspecies seen in the summer before August, but I never found it breeding.

109. **Falco sparverius phalæna**. DESERT SPARROW HAWK.—Permanent resident. Common.

110. **Pandion haliaëtus carolinensis**. OSPREY.—Common, leaving for the south early in the fall just when the streams are commencing to swarm with salmon.

111. **Asio wilsonianus**. LONG-EARED OWL.—Permanent resident. Scarce.

112. **Asio flammeus**. SHORT-EARED OWL.—Common resident, occasionally a few pairs remain to breed. A full grown young bird taken in July was very dark and rufous.

113. **Strix occidentalis caurina**. NORTHERN SPOTTED OWL.—Very rare. I purchased a very poor mounted specimen from Mr. Wm. Hall who got it at Mount Lehman, some fifteen miles down the Fraser River from Sumas, where a pair had reared a brood of young. During the eleven years I resided at Chilliwack and Sumas I worked very hard for this bird, visiting all likely localities and offering rewards for any owls brought me with dark brown eyes, but could get no trace of it. Returning for a brief visit in the winter of 1909, I was delighted to secure a fine specimen close to my old home. I had gone out on January 28 to try a little 22 pocket pistol on the jays and squirrels which were a pest, and after shooting a number of these I got first a Goshawk, and a little later this beautiful owl.

114. **Scotiaptex nebulosa nebulosa**. GREAT GRAY OWL.—Very rare. The last record I have was of one killed in January, 1890, at Sumas. Prior to that it was of fairly regular occurrence in the winter.



115. *Cryptoglaux funerea richardsoni*. RICHARDSON'S OWL.— One record only, a male taken by myself January 13, 1903.

116. *Cryptoglaux acadica scotæa*. NORTHWESTERN SAW-WHET OWL.— Resident, rather scarce. I list this as *scotæa* with some misgivings, as some of the specimens taken seemed to me to be quite light enough for the eastern bird. I have never heard the "saw-whetting" cry in the west from this owl, or any other note than a monotonous single whistle or hoot, kept up in constant repetition, now fast, now slow, for sometimes a quarter of an hour at a stretch. This is easily imitated by whistling the syllable "too" with the tip of one's tongue against the roof of the mouth. I have called the bird up in this way often — once one even settled on my head in the dusk.

117. *Otus asio kennicotti*. KENNICOTT'S SCREECH OWL.— Tolerably common resident.

118. *Bubo virginianus pallescens*? WESTERN HORNED OWL.—

119. *Bubo virginianus saturatus*. DUSKY HORNED OWL.— The Bupos of this valley present a great variety, from pale white footed birds almost pale enough for the Arctic subspecies, through rufous colored birds that looked like typical eastern birds when laid side by side, to the darkest *saturatus*. I have one of the light-colored birds still and it is lighter than any I have since taken in eastern B. C. *Saturatus* is the only breeding form.

120. *Nyctea nyctea*. SNOWY OWL.— Scarce though fairly regular visitant to the valley. Common in November and December, 1896. These are the only months I have seen it in here.

121. *Surnia ulula caparoch*. HAWK OWL.— Rare in the valley, earliest fall record October 16. I have reason to believe that it breeds in the mountains in the Hudsonian Zone.

122. *Speotyto cunicularia hypogæa*. BURROWING OWL.— Scarce straggler to Sumas prairie, two fall records and one in spring.

123. *Glaucidium gnoma californicum*. CALIFORNIA PIGMY OWL.— Common resident breeding in the valley, as well as in the high mountains. This may be the subspecies recently described by Grinnell from Vancouver Island (*swarthi*). The rolling whistle of this owl is the greatest of all aids to the collector in the west. An imitation of this, or the single call note, brings every small bird right up to you, even from the tops of the gigantic firs. It also brings up any Pigmy Owl that may be in the vicinity, and I once had one of these come down and carry off an Olive-sided Flycatcher that I had brought down from the treetops and shot.

124. *Coccyzus americanus occidentalis*. CALIFORNIA CUCKOO.— Tolerably common summer resident of late years. Formerly rare.

125. *Ceryle alcyon caurina*. NORTHWESTERN KINGFISHER.— Common resident.

126. *Dryobates villosus leucomelas*. NORTHERN HAIRY WOODPECKER.— I shot two stragglers of this woodpecker, one on March 7, 1895, but I cannot find the record of the other. One was quite typical



the other approached the next subspecies. Both are in the collection of Mr. Brewster.

127. **Dryobates villosus monticola.** ROCKY MOUNTAIN HAIRY WOODPECKER.— This is of regular occurrence in the valley and may breed there. It is the breeding Hairy Woodpecker of the adjacent mountains. Specimens sent to Mr. Brewster were identified as *hyloscopus*, but this was before *monticola* was described.

128. **Dryobates villosus harrisi.** HARRIS'S WOODPECKER.— Common resident.

129. **Dryobates pubescens gairdneri.** GAIRDNER'S WOODPECKER.— Common resident.

130. **Picoides americanus fasciatus.** ALASKAN THREE-TOED WOODPECKER.— Resident in the Hudsonian Zone on all the mountains. Never seen in the valley.

131. **Sphyrapicus ruber notkensis.** NORTHERN RED-BREASTED SAPSUCKER.— Tolerably common summer resident.

132. **Phloeotomus pileatus abieticola.** NORTHERN PILEATED WOODPECKER.— Common resident.

133. **Asyndesmus lewisi.** LEWIS'S WOODPECKER.— Tolerably common summer resident.

134. **Colaptes auratus luteus.** NORTHERN FLICKER.— Only one record, a bird taken by myself at Sumas, April 8, 1903. Its rarity is notable as I found it a regular migrant on Vancouver Island.

135. **Colaptes cafer saturator.** NORTHWESTERN FLICKER.— Common resident.

136. **Chordeiles virginianus virginianus.** NIGHTHAWK.— Breeding birds sent to Mr. Ridgway and to Mr. Brewster are identified as this form by both. "They certainly are not *henryi* or *sennetti*" (Brewster in *epist.*) *Henryi* and *hesperis* are constantly quoted as the British Columbian subspecies, but all I send back to be identified from different localities are typical *virginianus*. The last so identified are breeding birds from the dry interior (Okanagan) which Mr. Oberholser labels as *virginianus*.

137. **Cypseloides niger borealis.** BLACK SWIFT.— Common summer resident always appearing in the valley in moist or rainy weather. It breeds in the mountains, but the only place I have seen that looked likely is Che-am peak at the extreme head of the valley. Here I have seen a few dashing about the cliffs in July. A note for June 16, 1901, from my notebook reads, "One of the females had a fully formed egg with the shell soft, measuring 1.03 in.  $\times$  .66 in., an almost perfect oval." It is a mistake to suppose the females can always be told from the males by the rounded tail and white edges to the feathers of belly. These are only the younger birds. Old females probably two years and over have the forked tail and black under surface of fully adult males.

138. **Chaetura vauxi.** VAUX'S SWIFT.— Common summer resident.

139. **Archilochus alexandri.** BLACK-CHINNED HUMMINGBIRD.— Rare though regular summer resident.

140. *Selasphorus rufus*. RUFOUS HUMMINGBIRD.— Common summer resident.

141. *Tyrannus tyrannus*. KINGBIRD.— Common summer resident.

142. *Tyrannus verticalis*. ARKANSAS KINGBIRD.— Scarce summer resident.

143. *Sayornis sayus*. SAY'S PHEBE.— Straggler only. Two records. October 1, 1887, and March 26, 1896.

144. *Nuttallornis borealis*. OLIVE-SIDED FLYCATCHER.— Summer resident, from the floor of the valley up to 6000 feet. Not common.

145. *Myiochanes richardsoni richardsoni*. WESTERN WOOD PEWEE.— Common summer resident.

146. *Empidonax difficilis difficilis*. WESTERN FLYCATCHER.— Common summer resident.

147. *Empidonax trailli trailli*. TRAILL'S FLYCATCHER.— Common summer resident.

148. *Empidonax hammondi*. HAMMOND'S FLYCATCHER.— Scarce, breeding in the mountains and foothills only. On Vancouver Island (Cowichan) this species breeds right down to sea level.

149. *Empidonax wrighti*. WRIGHT'S FLYCATCHER.— Only one undoubted *wrighti* taken, April, 1888.

150. *Otocoris alpestris arcticola*. PALLID HORNED LARK.— Common spring and fall migrant through the valley, and the breeding *Otocoris* above timber line in the Cascades. The smaller subspecies I have never seen at high altitudes.

151. *Otocoris alpestris strigata*. STREAKED HORNED LARK.—

152. *Otocoris alpestris merrilli*. DUSKY HORNED LARK.— Both of these are migrants only — *merrilli* is undoubtedly on its way to the arid plateau of Chilcotin via Harrison Lake, where it is a common breeder, but as I can find no record of *strigata* further north it is probably only a straggler to the valley. Mr. Brewster identifies five birds from the valley as *strigata* and one as *merrilli*. I have several of the latter in my own collection from Chilliwack.

153. *Pica pica hudsonia*. MAGPIE.— Common. Arrives in August and leaves in April. None breed.

154. *Cyanocitta stelleri stelleri*. STELLER'S JAY.— Common resident. Rare in the high mountains.

155. *Cyanocitta stelleri annectens*. BLACK-HEADED JAY.— A straggler from the east side of the Cascades. One taken at Sumas, October, 1891, with a conspicuous white eyelid. Another seen later but not secured.

156. *Perisoreus obscurus griseus*. GRAY JAY.— Common up to timber line and down to 700 feet, never seen in the valley.

157. *Corvus corax principalis*. NORTHERN RAVEN.— Rather rare. Breeds from 500 ft. to the summit of the highest peaks.

158. *Corvus brachyrhynchos hesperis*. WESTERN CROW.— Common resident.

159. *Corvus caurinus*. NORTHWESTERN CROW.— Common resident.

While *caurinus* seems to breed only along the Fraser or a little way back from it, *hesperis* is generally distributed through the valley. Both may be found breeding on Sumas Prairie. The notes of the two are distinct, and *caurinus* has in addition a musical laughing cackle, something like a Magpie's.

160. ***Nucifraga columbiana***. CLARK'S NUTCRACKER.—Rare straggler, I have only three records for the valley, all in the fall. More common in the Hudsonian Zone of mountains but does not breed there (?)

161. ***Dolichonyx oryzivorus***. BOBOLINK.—I have taken both adults and young in July and August but do not think it breeds west of the Cascades.

162. ***Molothrus ater ater***. COWBIRD.—One record only, Sumas, May 26, 1897, a female with ovaries not at all enlarged. This is probably *Molothrus ater artemisiæ* (Grin.).

163. ***Xanthocephalus xanthocephalus***. YELLOW-HEADED BLACKBIRD.—Straggler, only two records, both adult males, May 14, 1891, and June, 1895.

164. ***Agelaius phoeniceus caurinus***. NORTHWESTERN REDWING.—Common resident, a few remain all winter.

165. ***Sturnella neglecta***. WESTERN MEADOWLARK.—Common resident.

166. ***Icterus bullocki***. BULLOCK'S ORIOLE.—One pair nested regularly in some large birch trees growing in the open near our ranch at Chilliwack—these were the only ones in the valley then. Since, they have increased with the opening up of the forest and on my last visit to the valley I saw their nests or heard of them at several different points.

167. ***Euphagus cyanocephalus***. BREWER'S BLACKBIRD.—Common, but only rarely seen all winter.

168. ***Hesperiphona vespertina montana***. WESTERN EVENING GROSBEEK.—Sporadically abundant, during most years absent or rare. No breeding record.

169. ***Pinicola enucleator montana***. ROCKY MOUNTAIN PINE GROSBEEK.—A scarce winter visitant to the valley. The form breeding in the Hudsonian Zone (above 6000 ft.) in the Cascades to the east Mr. Oberholser has identified as *montana* from a juvenile sent to him. It is possible the birds found in the valley may belong to some other subspecies; but I have no specimens of these left for identification. The Queen Charlotte Island bird is typical *flammula*.

170. ***Carpodacus purpureus californicus***. CALIFORNIA PURPLE FINCH.—Common resident of the valley. I have seen no species of *Carpodacus* in the mountains.

171. ***Loxia corvirostra minor***. CROSSBILL.—Usually rare in the valley, but enormously common in the spring and early summer of 1890, passing through with Evening Grosbeaks in large flocks. Breeds plentifully in the Hudsonian Zone.

172. ***Loxia leucoptera***. WHITE-WINGED CROSSBILL.—I shot three

out of a flock of 20 at Sumas, February 4, 1896. The only ones I ever saw in this district.

173. *Leucosticte tephrocotis tephrocotis*. GRAY-CROWNED ROSY FINCH.— In the winter of '96-'97 I collected one or two typical *tephrocotis* from flocks of the next subspecies on Sumas prairie, also a good many of *littoralis* with brown feathers in the cheeks showing an approach to the former.

174. *Leucosticte tephrocotis littoralis*. HEPBURN'S ROSY FINCH.— Abundant the winter of '96-'97. Usually rare. Breeds on Mt. Che-am and other high peaks.

175. *Acanthis linaria linaria*. REDPOLL.— Irregular winter visitant. Sometimes common. Usually present during alternate winters. Latest spring record, April 6, 1896.

176. *Acanthis linaria exilipes*. HOARY REDPOLL.— One specimen taken, typical as to the bill but flanks and lower coverts slightly streaked. I must protest against the usage of classing the Hoary Redpoll as a subspecies of *hornemanni*, it is clearly a subspecies of *linaria*, as every intergrade both as to shape of bill and tone and pattern of plumage between the two can be found in any large series, but no intergrades between *exilipes* and *hornemanni*; and though absolutely typical examples of the former are almost exact miniatures of the latter the majority of *exilipes* show a far closer approach to *linaria*.

177. *Spinus pinus*. PINE SISKIN.— Common resident.

178. *Plectrophenax nivalis nivalis*. SNOW BUNTING.— Scarce though fairly regular winter visitant to Sumas prairie.

179. *Calcarius lapponicus alascensis*. ALASKAN LONGSPUR.— Common in the fall, rare in spring, one or two remain all winter.

180. *Rhynchophanes mccowni*. MCCOWN'S LONGSPUR.— Two records. An adult male in full breeding plumage taken on a little ridge of natural prairie on our ranch at Chilliwack, June 1, 1887, and two females taken at the identical spot three years later almost to a day, after watching them circle about high in the air for about quarter of an hour. All three of course were stragglers only. I have never seen the species in the dry interior though I have always been on the lookout for it. It goes very much against the grain for me to put this in a different genus from the Lapland and Chestnut-collared Longspurs. All three are so perfectly congeneric in structure, notes, and habits.

181. *Poœcetes gramineus affinis*. OREGON VESPER SPARROW.— Very scarce migrant only.

182. *Passerculus sandwichensis sandwichensis*. ALEUTIAN SAVANNAH SPARROW.— Tolerably common migrant.

183. *Passerculus sandwichensis alaudinus*. WESTERN SAVANNAH SPARROW.— Abundant migrant, common breeder, and an occasional bird seen all winter. Some splitter will undoubtedly some day separate the small breeding form of the marshes and low meadows from the larger bird that passes through in great numbers when the small bird is sitting on eggs,

or in some cases feeding young. The small form is allied to *bryanti* and like it, is a bird of the lowlands and estuaries of the coastal strip.<sup>1</sup>

184. **Chondestes grammacus strigatus.** WESTERN LARK SPARROW.—First taken May 21, 1889. Another bird seen in spring of 1896. In 1899 I saw a breeding pair in the valley. It has recently become common in northern Okanagan and is probably also increasing at Chilliwack.

185. **Zonotrichia querula.** HARRIS'S SPARROW.—Two taken January 8, 1895, in which year there was an invasion of this sparrow as far west as Vancouver Island. Another seen in April, 1895.

186. **Zonotrichia leucophrys gambeli.** INTERMEDIATE SPARROW.—Common migrant. No specimens of Nuttall's Sparrow taken though it is the common breeding bird of the coast and islands.

187. **Zonotrichia coronata.** GOLDEN-CROWNED SPARROW.—Tolerably common migrant.

188. **Spizella monticola ochracea.** WESTERN TREE SPARROW.—Scarce winter visitant.

189. **Spizella passerina arizonæ.** WESTERN CHIPPING SPARROW.—Common summer resident.

190. **Junco oreganus oreganus.** OREGON JUNCO.—Breeding from the floor of the valley to the Hudsonian Zone.

191. **Junco oreganus connectens.** SHUFELDT'S JUNCO.—Common winter visitant. I cannot say with certainty that this subspecies is displacing *oreganus* as it is in the Seattle-Tacoma region.

192. **Junco hyemalis hyemalis.** SLATE-COLORED JUNCO.—Casual winter visitant. Two taken at an interval of about seven years, one other, at least, observed.

193. **Melospiza melodia morphna.** RUSTY SONG SPARROW.—Abundant resident.

194. **Melospiza melodia rufina.** SOOTY SONG SPARROW.—Winter visitant only (?). Specimens taken were not as dark as those from north-western Vancouver Island, nor even as dark as some from the dry interior in Okanagan.

195. **Melospiza lincolni lincolni.** LINCOLN'S SPARROW.—

196. **Melospiza lincolni striata.** FORBUSH'S SPARROW.—Many birds sent back to eastern collectors labeled *striata* passed unchallenged, including those sent to Mr. Brewster, but the only skin I have left from the valley is *lincolni lincolni*. Lincoln's Sparrow in one form or another breeds just below the Hudsonian Zone, and the species is a common migrant through the valley.

197. **Passerella iliaca unalaschcensis.** SHUMAGIN FOX SPARROW.—

198. **Passerella iliaca insularis.** KADIAK FOX SPARROW.—

199. **Passerella iliaca townsendi.** TOWNSEND'S FOX SPARROW.—Dr. Bishop and Mr. Oberholser have identified these three races from migrating Fox Sparrows I have sent back from Chilliwack. Dr. Bishop

<sup>1</sup> [cf. Bishop, Condor, Sept. 1915, p. 187.—Ed.]



has also identified two females taken April 11, 1905, as "*fuliginosa* approaching *townsendi*" but it has seemed safer to list them as the latter, as I know I have never seen in this valley the typical *fuliginosa* that breeds on the islands in the Gulf of Georgia, which is an extremely saturated form with *no yellow on the under mandible*. All three forms listed above are migrants, though I have once seen *townsendi* wintering in the valley.

200. *Passerella iliaca schistacea*. SLATE-COLORED FOX SPARROW.— This is a scarce breeder in the Hudsonian Zone of the Cascades. I have never seen it in the valley. Identified by Oberholser.

201. *Pipilo maculatus oregonus*. OREGON TOWHEE.— Common resident.

202. *Zamelodia melanocephala*. BLACK-HEADED GROSBEEK.— Common summer resident in the valley.

203. *Passerina amoena*. LAZULI BUNTING.— Tolerably common summer resident.

204. *Piranga ludoviciana*. WESTERN TANAGER.— Common summer resident up to upper edge of Canadian Zone (about 5000 ft.).

205. *Petrochelidon lunifrons lunifrons*. CLIFF SWALLOW.— Scarce up to about 1895, since then more common and a colony breeds on a barn near the town of Chilliwack.

206. *Hirundo erythrogastra*. BARN SWALLOW.— Common summer resident.

207. *Iridoprocne bicolor*. TREE SWALLOW.—

208. *Tachycineta thalassina lepida*. VIOLET-GREEN SWALLOW.—

209. *Stelgidopteryx serripennis*. ROUGH-WINGED SWALLOW.— All three of these Swallows are common and breed, though when I first arrived in the valley there were no Violet-green Swallows breeding there.

210. *Riparia riparia*. BANK SWALLOW.— Tolerably common and a colony must breed within fifty miles though I never found it breeding west of the Cascades.

211. *Bombycilla garrula*. BOHEMIAN WAXWING.— Common and fairly regular winter visitant, the first arrivals usually seen towards the end of October.

212. *Bombycilla cedrorum*. CEDAR WAXWING.— Common summer resident. Cedar Waxwings might be expected to winter on the coast of British Columbia, but I never saw them at that season in the Chilliwack Valley. Once I saw a flock in November, a very late date for the species.

213. *Lanius borealis*. NORTHERN SHRIKE.— Fairly common migrant, a few remaining all winter. British Columbian birds are of large size with very large bills, doubtless Grinnell's new subspecies *invictus*.

214. *Lanius ludovicianus gambeli*. CALIFORNIA SHRIKE.— One record only, a single bird shot by my father in April, 1888, and identified by Mr. Brewster.

215. *Vireosylva olivacea*. RED-EYED VIREO.— Common summer resident.



216. *Vireosylva gilva swainsoni*. WESTERN WARBLING VIREO.—Tolerably common summer resident.
217. *Lanivireo solitarius cassini*. CASSIN'S VIREO.—Fairly common summer resident.
218. *Vireo huttoni obscurus*. ANTHONY'S VIREO.—One record, May, 1905, the only one I ever took on the mainland.
219. *Vermivora celata celata*. ORANGE-CROWNED WARBLER.—Regular migrant and not uncommon in the fall when the gray-headed young birds are easily distinguished from those of the next subspecies. Specimens identified by Oberholser.
220. *Vermivora celata lutescens*. LUTESCENT WARBLER.—Common and it may breed in the valley or the adjacent foothills, but I never actually found undoubted evidence of the fact.
221. *Dendroica aestiva rubiginosa*. ALASKA YELLOW WARBLER.—Common summer resident in the valley.
222. *Dendroica coronata*. MYRTLE WARBLER.—Fairly common migrant.
223. *Dendroica auduboni auduboni*. AUDUBON'S WARBLER.—Common migrant and a few remain to breed on the foothills. It is possible also that this Warbler may remain all winter as I have seen it as late as January 10, but I think the bulk, if not all, leave after that date and do not return until after the spring moult is completed.
224. *Dendroica nigrescens*. BLACK-THROATED GRAY WARBLER.—Common summer resident.
225. *Dendroica townsendi*. TOWNSEND'S WARBLER.—Tolerably common migrant but I never found it breeding in the valley, which is strange considering that it is a common breeder at sea level on Vancouver Island.
226. *Oporornis tolmiei*. MACGILLIVRAY'S WARBLER.—Common summer resident.
227. *Geothlypis trichas arizela*. PACIFIC YELLOW-THROAT.—Common summer resident.
228. *Icteria virens longicauda*. LONG-TAILED CHAT.—One record, a straggler taken on Sumas prairie, May 26, 1897.
229. *Wilsonia pusilla pileolata*. PILEOLATED WARBLER.—
230. *Wilsonia pusilla chryseola*. GOLDEN PILEOLATED WARBLER.—Both of these forms occur; it is probable that the latter is the breeding race. I have specimens of the former in my collection and Mr. Brewster identified two sent to him as belonging to the latter race though not extreme examples.
231. *Setophaga ruticilla*. REDSTART.—One record, an adult male taken in June, 1889.
232. *Anthus rubescens*. PIPIT.—Abundant migrant and a fairly common breeder at and above timber line.
233. *Cinclus mexicanus unicolor*. DIPPER.—Common resident, breeding in all the mountain valleys that have rushing streams and de-

scending to the larger rivers in October when the Dog Salmon are running, their ova forming the main diet of the Dipper at that season and through the winter.

234. *Dumetella carolinensis*. CATBIRD.—Scarce summer resident, probably about six pairs of birds breeding in the valley.

235. *Salpinctes obsoletus obsoletus*. ROCK WREN.—One record. I looked for this wren regularly every summer in what I took to be suitable localities in the mountains, and ultimately took one hopping about like a sparrow on a gravel bar in a river. This was late in November in very cold weather. I have never seen the species so late in its natural habitat east of the Cascades.

236. *Thryomanes bewicki calophonus*. SEATTLE WREN.—Common resident. In the severe winter of 1908-09 when the thermometer dropped to thirteen below with a howling wind for a week, this hardy little wren seemed to suffer no inconvenience and while Purple Finches and Juncos were dying in numbers, it trilled its cheery song from any sheltered nook. It is never found east of the Cascades, and the "Southern British Columbia" in the last A. O. U. Check-List should be corrected to southwestern.

237. *Troglodytes aëdon parkmani*. WESTERN HOUSE WREN.—Common summer resident.

238. *Nannus hiemalis pacificus*. WESTERN WINTER WREN.—Common summer resident from the floor of the valley to the Hudsonian Zone. Common throughout the winter in the valley.

239. *Telmatodytes palustris paludicola*. TULÉ WREN.—Breeding in suitable localities and a few probably remain all winter.

240. *Certhia familiaris occidentalis*. CALIFORNIA CREEPER.—Fairly common resident.

241. *\*Sitta carolinensis aculeata*. SLENDER-BILLED NUTHATCH.—I include this on the authority of Macoun's Catalogue of Canadian birds. The record stands "One specimen taken on Sumas Prairie, B. C., October 10, 1894 (E. F. G. White)." Mr. White knows this bird well and the above constitutes the only record of the subspecies for Canada, as the form occurring east of the Cascades is now separated as *nelsoni*. It is quite likely the slender billed Nuthatch occasionally straggles over the border from northwestern Washington just as the Bush-Tit does. The nearest breeding record for this nuthatch is the neighborhood of Tacoma.

242. *Sitta canadensis*. RED-BREASTED NUTHATCH.—Common resident from the floor of the valley to the Hudsonian Zone.

243. *Penthestes atricapillus occidentalis*. OREGON CHICKADEE.—Common resident.

244. *Penthestes rufescens rufescens*. CHESTNUT-BACKED CHICKADEE.—Common resident.

245. *Psaltiriparus minimus minimus*. BUSH-TIT.—Two taken from a large flock in the brush along the eastern edge of Sumas prairie, Nov. 25, 1899, and a pair observed breeding at the same place March 23

following. I never saw the species before or since and this must have been only a sporadic northward movement. The Bush-Tit occurs as a resident some fifty miles nearer the coast at Boundary Bay.

246. *Regulus satrapa olivaceus*. WESTERN GOLDEN-CROWNED KINGLET.—Common breeder in Hudsonian Zone and common from September to May in the valley.

247. *Regulus calendula grinnelli*. SITKA KINGLET.—It is probable that both races of the Ruby-crown occur but I have neglected to get Chilliwack specimens identified, so only list the form that is most certain to be the resident subspecies.

248. *Myadestes townsendi*. TOWNSEND'S SOLITAIRE.—Fairly common migrant, nesting in the mountains and possibly to near the base of the foothills. A few winter.

249. *Hylocichla guttata guttata*. ALASKA HERMIT THRUSH.—One taken May 2, 1905.

250. *Hylocichla guttata nanus*. DWARF HERMIT THRUSH.—Scarce migrant.

251. *Hylocichla guttata sequoiensis*. SIERRA HERMIT THRUSH.—This is the breeding form of Hermit Thrush. I have not noticed it below the Hudsonian Zone. Identified by Oberholser.

252. *Hylocichla ustulata ustulata*. RUSSET-BACKED THRUSH.—Common summer resident from the floor of the valley up into the foothills. I have heard what I took to be this thrush well up into the Canadian Zone but have no specimens from there and the mountain bird is probably *swainsoni*.

253. *Planesticus migratorius migratorius*. ROBIN.—Specimens taken on both spring and fall migrations, the latter identified by Mr. Ridgway.

254. *Planesticus migratorius propinquus*. WESTERN ROBIN.—Abundant in summer and a few remain throughout most winters. Breeds up to the Hudsonian Zone.

255. *Ixoreus naevius naevius*. VARIED THRUSH.—Resident. A few breed in the cool hemlock and spruce forests on the floor of the valley and more commonly at higher elevations.

256. *Sialia mexicana occidentalis*. WESTERN BLUEBIRD.—Fairly common breeder in the valley. I have seen this bluebird as late as January 10, but doubt if any remain through the winter though they do so at salt water fifty miles westward.

257. *Sialia currucoides*. MOUNTAIN BLUEBIRD.—Common migrant.

#### HYPOTHETICAL LIST.

*Pelecanus californicus*. CALIFORNIA BROWN PELICAN.—A Pelican haunted the Fraser River at Sumas for some time in the fall of 1894, that was described to me as a "cross between a Pelican and a Sand-hill Crane." This suggests the young bird of this species.

**Chen rossi.** ROSS'S GOOSE.—A very small Snow Goose frequented Sumas prairie for about six weeks in the spring of 1896. It always associated with the same flock of Hutchin's Geese and kept clear of a small flock of Snow Geese that were always present on the prairie. It looked much smaller than the latter though I was never able to get them in close juxtaposition.

**Branta canadensis occidentalis.** WHITE-CHEEKED GOOSE.—Mr. Brewster identifies four geese, from a series I collected for him, as this subspecies. He says of them "Nos. 46179 and 47105 are typical, No. 46178 is fairly typical in every respect, No. 47104 is typical in respect to markings of head and neck but the underparts are as light colored as in extreme specimens of *canadensis*."

With all deference to so eminent an authority, I hesitate to include this subspecies in my regular list as I have since seen specimens of true *occidentalis* which seems to be larger, of a deeper brown coloration throughout, and with larger bills and feet.

**Dryobates pubescens**, subsp.?—I have twice seen at close quarters Downy Woodpeckers of pure black and white coloration quite different from *gairdneri*. From the quantity of white spotting on the wings I should take these for *nelsoni*.

**Vermivora rubricapilla gutturalis.** CALAVERAS WARBLER.—A singing male pursued for some time but not secured in April, 1889.

**Penthestes hudsonicus hudsonicus.** HUDSONIAN CHICKADEE.—Chickadees seen in the Hudsonian Zone which I took at the time for *rufescens* were probably of this species as I have found it a regular resident of the Cascades a little further east.

**Astragalinus tristis salicamans?** WILLOW GOLDFINCH.—Since I left the region I have had several reports of Goldfinches feeding on the thistles. I kept a very careful lookout for this bird during my residence there, and it certainly did not occur then, though I saw it further south in Washington state. The Chilliwack birds may be *pallidus* which is a common resident east of the Cascades in British Columbia.

## THE BIRDS OF CULEBRA ISLAND, PORTO RICO.

BY ALEXANDER WETMORE.

THE Island of Culebra, second in size of our possessions in the Virgin group, lies twenty miles east of Cape San Juan on the north-eastern point of Porto Rico. Though known with Vieques as one of the *Islas de Pasaje*, there is little more than passing mention made of Culebra in the accounts of historians or in other literature pertaining to Porto Rico. Culebra must have been discovered at an early date, probably by Columbus in 1493 as in that year he reached St. Croix and then crossed to Porto Rico. In 1530 the historian Iñigo Abbad remarks that the few remaining aborigines left Porto Rico and settled on Mona, Vieques and other off-lying islands. Before that time Culebra was supposed to have been visited at times by the Arawakas from the south. As there was no fresh water supply on the island for many years, it remained almost uninhabited.

Since American occupation of Porto Rico, Culebra has been made a naval reserve as the inner bay, Ensenada Honda, harbors vessels of large size in safety. In 1899 the United States Fish Commission Steamer "Fish Hawk" was at Culebra Island from February 7 to 12 and a collection of birds was made by Mr. A. B. Baker and Dr. J. D. Milligan. In the report of the work done in Porto Rico by the scientists on the Fish Hawk (Evermann, 1902, p. 22-23) mention is made of Brown Pelicans and "coots, ducks, fish hawks and Kingfishers as well as various species of land-birds" seen about the small lagoon near the village on Culebra: this is to my knowledge the only attempt to enumerate the birds of Culebra Island in a published account. Mr. Cory (Auk, 1891, p. 37) lists a single specimen of *Careba portoricensis* from Culebra Island. Mr. Ridgway (Birds of North and Middle America) makes reference to specimens from Culebra in several instances, from birds collected by the Fish Commission expedition or from a few skins sent in to the United States National Museum by officers stationed at the naval encampment. It is possible that Mr. Riise of St. Thomas secured skins from Culebra in the fifties but I have seen no mention of them.



After making a collection of birds on Vieques Island, on April 4, 1912, I crossed to Culebra on the mail sloop "Pedrito." The port, Playa Sardine, was reached about ten o'clock at night and accommodations were secured that night in the village. The following day through a letter from my friend, Mr. Harold Stiles, to Don Pedro Marqués I was given a two-roomed house on the hill just above the village and after settling my belongings, field work was begun. On April 11 I visited Louis Peña or Southwest Cay and on the 15th crossed to Culebrita for a day. Work on Culebra was carried on until April 22 when I left on the return journey to Porto Rico.

#### PHYSICAL FEATURES.

Culebra Island is approximately 7 miles long and from 4 to 5 miles wide. It is roughly triangular in shape and has the southeastern coast indented by a large bay known as Ensenada Honda. The village Playa Sardine lies at the base of the promontory between this bay and a smaller one on the south side. The island is hilly, with elevations rising three or four hundred feet above the sea. Rolling brush-grown pastures extend inland and some of the hills are densely covered with forest. At Playa Sardine and at Playa Brava (on the north coast) are small lagoons and in the western part of the island is a larger one known as Flamenco. The coast is in the main rough with rocky projecting headlands and narrow sandy beaches in the bays.

The small island of Louis Peña (Southwest Cay) lies a mile southwest of Playa Sardine. It is less than a mile long and is rather narrow with a hill at either end and a mangrove swamp in the center. Holes dug in the sand and lined with boards in out of the way places on this island betrayed the work of smugglers whose activities of late years have been largely curtailed through the efforts of internal revenue agents. Culebrita Island east of Culebra is slightly larger than Louis Peña. A lighthouse (kept at the time of my visit by Señor Guillermo Morris) stands on a flat-topped hill 500 feet above the sea. Much of this island is low and there is one lagoon. Cayo Norte (North East Cay) was not visited. It is said to be partly cleared. Besides these three islands



there are several smaller keys and reefs near them that are the haunts of various sea birds. In crossing from Vieques I passed near Cay Lobo (Cross Key) and found it a forbidding cactus covered rock with no evidence of bird life apparent.

Culebra, though subject at times to torrential rains, is dry and arid. The annual rainfall for the island for 1908 was 47.33 inches, for 1909, 54.63 inches, and for 1910, 35.81 inches. No other records are available. The population depends upon rain for its water supply and a cement catch basin draining into a municipal cistern has been built around the top of a hill. The sun was strong at the time of my visit and its rays penetrating but as the air was dry no bodily depression resulted. The trade winds cooled and refreshed when one could remain in the shade.

#### GENERAL CONDITIONS.

The vegetation of Culebra was, so far as my observations extended, similar to that of Vieques Island. Extensive pasture-lands were cleared out by peons with their machetes once or twice a year and a few fields were cultivated in bananas, yautias and sweet potatoes. Great growths of cactus were found in many places on the rocky soil. A prickly pear (*Opuntia* sp.) was very common and there was at least one species of *Cereus* and another form not known to me. These cactus growths with a few bushes and small trees covered large areas on the stony hills, and bound together with creepers, formed a dense growth difficult of passage. A slender line of mangroves bordered the inner bay and on the sandy outer beaches were great growths of Uvas de playa (*Coccolobis* sp.). The flamboyant tree was common and in April was in bloom. At a distance the symmetrical trees thrust up their heads like scarlet tents. The spiny Rallo (*Acacia farnesiana*) and the equally thorny Asoto Caballo (*Randia aculeata*) were abundant in the pastures and threatened to overwhelm the grassland.

The mongoose has not been introduced into Culebra Island fortunately for the existing fauna. Rats are common and their nests were seen in cocoanut palms. A *Molossus* was the only bat observed. It was common in early twilight and harbored in

crevices about houses. Rabbits have been introduced on a small island in the inner bay and have fairly overrun it. None have come ashore though only a hundred yards or so of water separate them from the main island.

Among lizards *Ameiva exul* was common and I collected one specimen of *Mabuya sloani*. Two *Anolis* were abundant (*Anolis cristatellus* and *A. stratulus*).

#### BIRD LIFE.

At the present time 53 species of birds are known from Culebra Island. One other, *Phaëthon æthereus*, is included as of uncertain status. Of the valid species 49 have been actually observed or collected by the writer and others, while five are included on the strength of reports made by residents on the island. Three forms of birds that are truly Porto Rican are found, viz.:

*Myiarchus antillarum.*                      *Holoquiscalus brachypterus.*  
*Tiaris o. bryanti.*

There are therefore 22 birds that may be considered as endemic to the fauna of Porto Rico that do not reach Culebra. There are five missing on Culebra of those that extend their range as far as Vieques Island. Three of those lacking are common on Vieques. Following is the list:

*Saurothera vicilloti* (?)                      *Gymnasio nudipes* (?).  
*Melanerpes portoricensis.*              *Tolmarchus taylori.*  
*Dendroica adelaidæ.*

The avifauna of Culebra is seen to be much poorer than that of Porto Rico and to show a slight decrease in the number of forms below that of Vieques. There are four birds ranging to Culebra that do not reach Porto Rico though all but the first one are found on Vieques, viz.:

*Geotrygon mystacea.*                      *Sericotes h. holosericeus.*  
*Microlyssa c. exilis.*                      *Elainca m. martinica.*

BIRDS OF LOUIS PEÑA AND CULEBRITA ISLANDS.

During the work on Culebra Island the writer crossed on April 11 to Louis Peña or Southwest Cay lying just beyond the outer harbor at Playa Sardine. The following 14 species were noted on this visit:

<i>Phaëthon americanus.</i>	<i>Margarops f. fuscatus.</i>
<i>Fregata magnificens.</i>	<i>Vireosylva c. calidris.</i>
<i>Chæmepelia p. trochila.</i>	<i>Setophaga ruticilla.</i>
<i>Zenaida z. lucida.</i>	<i>Seiurus noveboracensis</i> subsp.
<i>Coccyzus m. nesiotes.</i>	<i>Dendroica p. bartholemica.</i>
<i>Tyrannus d. dominicensis.</i>	<i>Compsothlypis a. usneæ.</i>
<i>Elainea m. martinica.</i>	<i>Cæreba portoricensis.</i>

On April 15 the following 19 forms were observed on Culebrita Island:

<i>Pæcilonetta bahamensis</i>	<i>Streptoceryle a. alcyon.</i>
<i>Hæmatopus palliatus</i> (reported)	<i>Sericotes h. holosericeus.</i>
<i>Arenaria i. morinella.</i>	<i>Tyrannus d. dominicensis.</i>
<i>Pisobia fuscicollis.</i>	<i>Elainea m. martinica.</i>
<i>Sterna maxima.</i>	<i>Margarops f. fuscatus.</i>
<i>Chæmepelia p. trochila.</i>	<i>Mimus p. orpheus.</i>
<i>Zenaida z. lucida.</i>	<i>Vireosylva c. calidris.</i>
<i>Columba squamosa.</i>	<i>Dendroica p. bartholemica.</i>
<i>Crotophaga ani.</i>	<i>Cæreba portoricensis.</i>
	<i>Tiaris b. omissa.</i>

BIBLIOGRAPHY.

- CORY, C. B.  
1892. Catalogue of West Indian Birds, 1892. p. 116 (records *Cæreba portoricensis.*)
- EVERMANN, B. W.  
1902. General Report on the Investigations in Porto Rico of the U. S. Fish Commission steamer Fish Hawk in 1899. Bull. U. S. Fish Comm., XX, for 1900, pub. 1902, p. 22-23.
- RIDGWAY, ROBERT.  
1901-1914. The Birds of North and Middle America. Bull. 50, U. S. Nat. Mus., Vols. I to VII.

RILEY, J. H.

1903. Description of a new Quail-dove from the West Indies. *Proc. Biol. Soc. Washington*, XVI, 1903, pp. 13-14. (Records *Geotryon mystacea* from Culebra.)

WETMORE, ALEX.

1916. Birds of Porto Rico. *Bull. 326, U. S. Dept. Agr.* 1916.

#### ANNOTATED LIST.

1. **Podilymbus podiceps antillarum** Bangs. ANTILLEAN PIED-BILLED GREBE.— Reported from the lagoons.

2. [**Phaethon aethereus** Linnaeus. RED-BILLED TROPIC-BIRD.— Catesby (Natural History of Carolina, etc., 1743, appendix, p. 14) says that this species breeds in great numbers on some little islands at the east end of Porto Rico. Culebra or rocks near it may have been included.]

3. **Phaethon americanus** Grant. YELLOW-BILLED TROPIC-BIRD.— On April 11 six or eight tropic-birds were circling about a rocky point on Louis Peña Island. At a distance the elongated rectrices were not visible so that the birds were mistaken at first for gulls. Three were collected but one blew out to sea and was lost. One wing-tipped bird bit me viciously when I grasped it. Other tropic birds were seen on April 13.

4. **Pelecanus occidentalis** Linnaeus. BROWN PELICAN.— Common. In the shallow bay at Playa Sardine from two to twenty pelicans were found daily. Most of them had the seal brown cervical feathers of the breeding plumage developed but a few were still in dark immature plumage. The water in the bay was shallow and small fish were abundant. In feeding the pelicans rose, two or three together to circle thirty or forty feet in the air. When fish were sighted the birds dove one after another. Or when nothing appeared they set the wings and glided down over the surface of the water and then rose to circle again. In diving the birds turned straight down. The wings were closed just before the water was reached and the bird disappeared entirely under the surface. In a few seconds it would reappear, fly heavily for a few feet, settle on the water facing the wind and hold the point of the bill down to drain the pouch. When this was accomplished the point of the bill was thrown up and out and the captured fish were swallowed with a gulp. This done the pelican would rise and join its circling companions once more. In diving in very shallow water the birds turned their breasts and spread their wings to check their momentum never going below the surface. When satisfied all rested on rocks along the shore in characteristic pelican attitudes. On the west coast of Porto Rico fishermen believe that these birds when old and feeble commit suicide by hanging by the head from some crevice in the rocks.

5. **Sula leucogastra** Boddaert. BOOBY.— Boobies were said to come in flocks the first of May to nest on two small rocks north of Culebrita Island. None were seen.

6. **Fregata magnificens** Matthews. MAN-O'-WAR BIRD.— Seen

occasionally flying or circling high in the air. On April 15 one came over the boat as I was crossing to Culebrita and I shot but failed to secure it.

7. ***Butorides virescens cubanus*** Oberholser. CUBAN GREEN HERON.—Green Herons were fairly common in the mangroves bordering the bay known as Ensenada Honda. They were very wild. A few were seen on the lagoon called Flamenco and two were collected on April 9 and 13.

8. ***Florida cærulea cærulescens*** (Latham). LITTLE BLUE HERON.—This species was heard and seen occasionally about Ensenada Honda. One was collected February 9, 1899, by Dr. J. D. Milligan of the "Fish Hawk."

9. ***Phœnicopterus ruber*** Linnaeus. FLAMINGO.—Flamingoes were said to have been found formerly on Culebra Island. The lagoon known as Flamenco receives its name from this bird.

10. ***Marila affinis*** (Eyton). LESSER SCAUP DUCK.—At the time of my arrival on Culebra Island there were about twenty-five ducks on the lagoon at Flamenco. None were secured but they were supposed to be this species. Eight were still present April 21.

11. ***Pœcilonetta bahamensis*** (Linnaeus). BAHAMA PINTAIL.—A few of these ducks were seen with the lesser scaup ducks on the lagoon at Flamenco. April 9 two birds in worn plumage were secured by Don Pedro Marqués at Playa Brava. April 15 I found about twenty-five in a nearly dry lagoon on Culebrita Island and secured several. The flight of these birds is swift like that of a teal but on the wing the long neck makes them resemble *Dafila acuta*. This flock contained birds of both sexes about to breed and among them was one immature bird two-thirds grown.

12. ***Falco sparverius loquacula*** Riley. PORTO RICAN SPARROW HAWK.—A common resident. These birds were nesting at the time of my visit and were very tame. A female taken April 6 had an egg in the oviduct nearly ready to be deposited. Others examined had the tips of the rectrices worn to spines through abrasion in the nesting cavity. These sparrow hawks were alert and noisy. One was seen pursuing a Red-tailed Hawk screaming shrilly. And one day as I was climbing a steep hillside one came darting swiftly down at my head and was dropped only a few feet away. They were feeding largely on lizards picked expertly from rocks or tree trunks and were seen pursuing birds unsuccessfully.

13. ***Buteo borealis*** (Gmelin). RED-TAILED HAWK.—Red-tailed Hawks were seen occasionally soaring over the forested hill tops.

14. ***Pandion haliaëtus carolinensis*** (Gmelin). OSPREY.—Single Ospreys were observed circling over hills near the sea on April 8 and 17. This species is probably a regular winter visitant.

15. ***Fulica caribæa*** Ridgway. CARIBBEAN COOT.<sup>1</sup>—April 13 before daylight one of these birds was shot at the border of a lagoon. The skin of this bird was stolen by a cat. Another coot was seen on April 19 but was not secured. These birds I thought were migrants. They may nest in one or two localities.

<sup>1</sup> It has been found recently that the coot from Porto Rico is *F. caribæa* instead of *F. americana* (cf. Wetmore, 1916, p. 34).

16. **Gallinula galeata galeata** (Lichtenstein). FLORIDA GALLINULE. — April 19 at daylight one of these gallinules was heard clucking in the mangroves bordering a lagoon. As it flew out I shot it. This bird and the coots observed were without doubt migrants. The lagoons here are not suited for their nests as there are no marshy growths around them.

17. **Rallus longirostris caribæus** Ridgway. CARIBBEAN CLAPPER RAIL. — Clapper Rails were common in the fringe of mangroves bordering the bay Ensenada Honda keeping entirely to the densest growth. Their loud explosive notes came all day long from the mangroves but only one bird was seen and collected. Though vociferous enough when not molested when they found that they were being followed they became silent and slipped away through the dense growth. They were heard grunting at night from the swamps at the foot of the hill below my house.

18. **Hematopus palliatus** Temminck. OYSTERCATCHER. — Oystercatchers were said to come at times to rocky points on Culebra and Culebrita Islands. They were known locally as the Coracolero.

19. **Eupoda wilsonia rufinucha** (Ridgway). RUFOUS-NAPED PLOVER. — There is a single bird in the U. S. National Museum collected on Culebra by Dr. J. D. Milligan of the "Fish Hawk" on February 11, 1899.

20. **Arenaria interpres morinella** (Linnæus). RUDDY TURNSTONE. — April 15 three or four of these birds were feeding on a mudbar in a lagoon on Culebrita. One was taken.

21. **Actitis macularia** (Linnæus). SPOTTED SANDPIPER. — Winter visitant. Common during the time of my visit. A few spotted sandpipers were seen along the sandy beaches but the greater number were found in the mangroves. As I sat watching for Clapper Rails they came walking all about me on the open muddy floor of the swamp, gleaning around the projecting roots and wading through shallow pools of water. A female taken April 9 was molting into spotted plumage.

22. **Pisobia fuscicollis** (Vieillot). WHITE-RUMPED SANDPIPER. — Two were seen April 15 on the north shore of Culebrita Island. One was shot but fell in a channel and was carried away by the currents.

23. **Larus atricilla** Linnæus. LAUGHING GULL. — One was seen April 13 flying above Playa Sardine and on the fifteenth four or five were perched on a buoy in Ensenada Honda. One of these was taken. After this date they were seen often circling over the inner bay sometimes high in the air.

24. **Sterna maxima** Boddaert. ROYAL TERN. — Usually a few of these terns were feeding with the pelicans in the shallow bay at Playa Sardine. Daily they came flying over the town high in the air calling harshly. On one occasion a flock of fifty or sixty passed over pursuing a frigate bird. On another day a frigate bird was seen closely following a tern which zigzagged from side to side in efforts to escape. Near Culebrita Island, April 15, a hundred or more were circling over a flat rocky islet. From their actions I thought that they were preparing to nest here. One was taken April 11.

25. **Geotrygon mystacea** (Temminck and Knip). TEMMINCK'S



GROUND-DOVE.— There is a male in the U. S. National Museum taken on Culebra Island by Mr. A. B. Baker, February 9, 1899.<sup>1</sup>

26. *Chæmepelia passerina trochila* Bonaparte. PORTO RICAN GROUND DOVE.— Resident. Ground doves were among the most abundant birds on the island. They were found in the roads and through the fields sometimes gathered in flocks of a dozen or more. About the lighthouse on Culebrita Island they were common and when alarmed darted away into shelter of the cactus. When Sparrow Hawks were in sight it was difficult to make them fly but on other occasions they whirled up in great confusion. There was no indication of breeding as yet in a series that were collected.

27. *Zenaida zenaida lucida* Noble. ZENaida DOVE.— Resident. Fairly common in the dense growths of dry forest. On the ground these doves appear much like Mourning Doves. One was taken on April 10.

28. *Patagioenas squamosa* (Bonnaterre). SCALED PIGEON.— Resident. Formerly these large pigeons were said to be common but now few are left. April 10 one flew from a clump of mangroves and lit above me. This bird was collected. Another was heard hooting but could not be found.

29. *Amazona vittata gracilipes* Ridgway. CULEBRA PARROT.— Formerly parrots were common on Culebra Island but now they are supposed to be extinct. Their destruction is due to the fact that they were considered a table delicacy and were hunted continually. When common they were said to do considerable injury in the plantations of bananas and plantains. Two specimens in the National Museum were collected by A. B. Baker on February 11 and 12, 1899. Another bears merely the date 1899.

30. *Coccyzus minor nesiotes* Cabanis. JAMAICAN MANGROVE CUCKOO.— Resident. These cuckoos were fairly common on Culebra Island and were seen on Culebrita and Louis Peña. Specimens were collected on Culebra April 13, 17 and 19, and on Culebrita, April 15.

31. *Crotophaga ani* Linnæus. ANI.— Resident. The Ani was very common on Culebra Island. These birds were found in flocks of from six to twenty individuals in the open pastures. They fed largely around the cattle, running, hopping and flying in endeavors to keep ahead of the work bulls browsing through the grass that they might secure the insects frightened up. One morning about 20 were flushed from the mangroves around a lagoon where they had spent the night. One day I shot four from a flock and a land crab seized one and dragged it into a hole nearly out of sight before I could prevent it.

32. *Streptoceryle alcyon alcyon* (Linnæus). BELTED KINGFISHER.— A winter visitant. Kingfishers were seen along the bays and lagoons and at times in the mangrove swamps. The last one was noted April 21. Señor Guillermo Morris, the lighthouse keeper on Culebrita Island, claimed that occasionally Kingfishers remained through the summer along the small channels swarming with minnows that were found between these islands.

33. *Microlyssa exilis exilis* (Gmelin). GILT-CRESTED HUMMINGBIRD.

<sup>1</sup> Cf. Riley, Proc. Biol. Soc. Washington, 1903, XVI, p. 14.

— On April 12 a female of this species was secured in some mangroves. On other occasions I thought that I saw these hummers but was not certain. Apparently the species is a rare resident.

34. **Sericotes holosericeus holosericeus** (Linnaeus). GREEN CARIB.— Resident. These large hummers were common everywhere on Culebra but were especially abundant in the mangroves bordering the lagoons. The birds were tame and unsuspicious and showed considerable curiosity. They began nest-building in the mangroves the tenth of April and the breeding season was well under way at the time of my departure. Intruding Honey Creepers and warblers were chased through the tree tops the hummers rattling their wings loudly. Though this sound was heard many times I was unable to explain how it was made. Several nests were found by watching the females. The birds flew to their nests without fear though sometimes I discovered that they were built only a few feet from my head. The nests were of the usual hummingbird type and were placed on small limbs from ten to thirty feet from the ground. The material in most of them was a soft cottony fiber taken from cactus, while externally they were covered with lichens. On April 19 a nest containing two heavily incubated eggs was collected. Others noted were still empty. Birds were collected on April 6, 8, 9, 10, 12, 15, 19 and 20.

35. **Anthracothonax aurulentus** (Audebert and Vieillot). PORTO RICAN MANGO.— Resident. This hummingbird was not common. The few birds seen were found in brush grown pastures. Specimens were taken on April 6, 10 and 19. A male in the National Museum collection was taken on February 11, 1899, by Dr. J. D. Milligan.

36. **Tyrannus dominicensis dominicensis** (Gmelin). GRAY KING-BIRD.— A common resident. Dozens of Gray Kingbirds roosted in the mangroves about the lagoon at Flamenco. In the morning at the first indication of coming light one would fly out calling loudly while others answered from below. From then until the sun was half an hour high the birds called incessantly from perches or on the wing making a considerable volume of sound. Following this morning concert they spread through the hills to feed. Signs of breeding were noted by April 10 and from then on the birds were often seen in pairs. April 13 one was seen carrying nesting material. Specimens were collected on April 6, 8, 10, 13 and 17.

37. **Myiarchus antillarum** (Bryant). ANTILLEAN FLYCATCHER.— On April 6 and 20 the unmistakable whistled notes of this flycatcher were heard near Punto Soldado but in the dense forest growth the bird could not be found. The species has not been recorded before from Culebra.

38. **Elainea martinica martinica** (Linnaeus). ANTILLEAN ELAINEA.— Fairly common in suitable localities. I believed them to be summer visitants here as on Vieques. The species had not been recorded from the island until my visit.

On Culebra the Elaineas frequented thick growths of cactus and spiny shrubs on the dry hillsides. They were more settled here than I had found them on Vieques in March. The birds moved about little, flying a few feet

at a time and then remaining perfectly still. A times attracted by their explosive notes I watched for half an hour without catching sight of them. Twice I heard them singing a sweet warbling song. As on Vieques Island they were few in number. About twenty were heard during my stay. Birds were collected on April 15 and 20. The species was seen on Louis Peña April 11 and Culebrita April 15.

39. **Margarops fuscatus fuscatus** (Vieillot). PEARLY-EYED THRASHER.—A common resident. These birds frequented dense brushy growth but were easily called into the open by "squeaking." They were found at times at the borders of mangrove swamps. One was seen on a low perch watching the fiddler crabs on the mud beneath it with great interest. Specimens were secured on April 6, 10, 15 and 19.

40. **Mimus polyglottos orpheus** (Linnaeus). JAMAICAN MOCKINGBIRD.—A fairly common resident. The mockingbird was less common on Culebra than on Vieques. They were found usually in the trees and bushes of upland pastures. At the time of my visit the birds were breeding and the males were singing constantly. Birds were collected on April 6, 8, 17 and 20.

41. **Vireosylva calidris calidris** (Linnaeus). JAMAICAN VIREO.—This vireo was noted on Louis Peña Island and Culebrita. None were seen on Culebra itself. One was taken on Louis Peña April 11. It is probably a rare summer visitant to the region under discussion.

42. **Setophaga ruticilla** (Linnaeus). REDSTART.—A winter visitant, fairly common at the time of my work on Culebra. The last Redstart noted was seen April 19. Though a few adult males were observed most of the birds recorded were females or males in immature plumage. Specimens were taken April 9 and 12.

43. **Seiurus noveboracensis noveboracensis** (Gmelin). WATER-THRUSH.—A fairly common winter visitant. In April Water-Thrushes were migrating and their numbers varied from day to day. They were heard singing daily in the mangrove swamps. Specimens were collected April 6 and 12.

44. **Seiurus noveboracensis notabilis** Ridgway. GRINNELL'S WATER-THRUSH.—One specimen of this form was collected April 12. The relative abundance of the two subspecies of *Seiurus noveboracensis* can be established only by further observations.

45. **Seiurus aurocapillus** (Linnaeus). OVENBIRD.—There is a specimen of the Ovenbird in the U. S. National Museum collected by A. B. Baker of the "Fish Hawk" on February 11, 1899. This species was not observed by the writer and it is probable that it had departed northward before my arrival.

46. **Dendroica discolor** (Vieillot). PRAIRIE WARBLER.—A winter visitant. The Prairie Warbler was noted April 6, 7, 9 and 10. On the ninth there was a small wave of migrant warblers and several of this species were observed. One shot on the sixth was so fat that it could not be preserved. Additional birds were taken April 9 and 10.

47. ***Dendroica coronata*** (Linnaeus). MYRTLE WARBLER.—There is a specimen of the Myrtle Warbler in the U. S. National Museum secured by A. B. Baker on February 9, 1899. This species is probably a rather rare winter visitant.

48. ***Dendroica petechia bartholemica*** Sundevall. PORTO RICAN YELLOW WARBLER.—An abundant resident. The mangroves bordering the bay Ensenada Honda were favorite haunts of these birds but many were found in the trees in the dry pastures. On the sandy beaches they were found in dense growths of *Uvas de playa* (*Coccolobis* sp.). In April they were paired and were about to nest. The males sang through the heat of the day, a song resembling that of *Dendroica aestiva*. Several birds in odd transition plumage from juvenal to adult were taken. A series was collected on April 8, 9, 11, 12, 13 and 15.

49. ***Compsothlypis americana usneæ*** Brewster. NORTHERN PARULA WARBLER.—A common winter visitant. In April the Parula was the most common of the migrating warblers. On April 11 in a warm sheltered growth of mangroves I heard one singing and from then on they sang often, sometimes a mere whisper but usually as loudly as they do in their northern homes. Two were collected on April 9 and the birds were observed until April 19.

50. ***Mniotilta varia*** (Linnaeus). A winter visitant. One was taken from a small flock of migrating warblers on April 9. Another was seen on April 12.

51. ***Cœreba portoricensis*** (Bryant). PORTO RICAN HONEY CREEPER.—A common resident. Honey Creepers were found everywhere on the island where there was cover for them. April 9 a bird was seen building a nest, as yet merely a loose ball of grass though the circular opening was already formed. Both male and female were seen working on other nests. This month apparently began a new breeding season. Young birds still having the superciliary stripe yellow were common. The Honey Creepers used their nests as roosts and I noticed that they did not appear in the morning until half an hour or more after other birds were active. A large series was collected between April 6 and 20. Grains of sand were found in 73 out of 149 stomachs examined from Porto Rico and the surrounding islands. This is strange as very little vegetable matter was eaten.

52. ***Holoquiscalus brachypterus*** Cassin. PORTO RICAN BLACKBIRD.—These blackbirds were said by Don Pedro Marqués to be found at times near Playa Brava. I saw none personally.

53. ***Tiaris bicolor omissa*** (Jardine). CARIB GRASSQUIT.—A common resident. At the time of my visit many of these Grassquits were breeding. Half a dozen pairs were nesting in the tall grass around one water hole. In other localities hundreds were feeding in the fields in loose flocks. On Culebrita these little finches were very common about the lighthouse. Many specimens were taken between April 6 and 20.

54. ***Tiaris olivacea bryanti*** (Ridgway). BRYANT'S GRASSQUIT.—A single male was collected April 8. No others were seen.

# NOTES ON A FEW OF THE RARER BIRDS OF SAUK AND DANE COUNTIES, WISCONSIN.

BY H. L. STODDARD.

PART of the following notes were made during a four years' residence at Prairie du Sac, from 1906 to 1910, but principally from April 9 to June 12, 1911, while collecting material for nesting groups of birds for the Milwaukee Public Museum, and also from May 25 to July 4, 1913, while engaged on similar work for the N. W. Harris Public School Extension of the Field Museum, Chicago.

The region under consideration includes the Township of Sumpster, Honey Creek, and Prairie du Sac, in Sauk County, and that part of the Township at Mazomanie, Dane County, that borders on the Wisconsin River. Particular attention was paid to the Baraboo Bluffs, a very rough, and in most places heavily wooded, range of hills of great interest to the Geologist and bird lover. As this region is in most sections rather difficult to transverse even on foot, owing to the lavish hand with which Nature has scattered quartzite boulders of all sizes and shapes over the landscape, it still retains much of its natural wildness and beauty, and is the home of numerous species of birds and mammals not found in the surrounding country. Virginia Deer are at the present time very numerous, and hawks and owls, Ruffed Grouse, and many species of warblers make this region their summer home. Brook trout are also found in Otter Creek, which finds its source in the numerous springs. Considerable time was also spent in the bottom lands of the Wisconsin River in the few remaining patches of heavy timber. Since these notes were made, the character of the river has been greatly changed for a considerable distance above Prairie du Sac by the great power dam, recently erected at that town, and the newly formed Lake Wisconsin ought to prove a great attraction for numerous species of water birds.

1. *Colymbus nigricollis californicus*. AMERICAN EARED GREBE.—Five of these Grebe were killed out of a flock of six, on the Wisconsin River, a few miles north of Prairie du Sac, April 30, 1909, by a hunter who gave



them to Mr. E. D. Ochsner, taxidermist of Prairie du Sac. Three of these were mounted, and are in his collection. The other two, both males in full plumage, he very kindly gave to me, and they are mounted, and in my possession. Kumlein and Hollister (*Birds of Wisconsin*, 1903, p. 6) give three records for this species for Wisconsin.

2. **Coturnicops noveboracensis**. YELLOW RAIL.—One specimen, a female, was caught in Sumpter, Sauk County, April 23, 1908. The bird was observed in a plowed field, and after a lively chase, was captured by Mr. A. O. Wagner and the writer, and is mounted in my collection. Another, a male in beautiful plumage, was collected across the river in Columbia County, May 1, 1911.

3. **Astur atricapillus atricapillus**. AMERICAN GOSHAWK.—Large numbers of this species appeared in Sauk County early in the winter of 1907-08. I took four specimens in a single trap on the following dates: one female, Dec. 6, one female Dec. 13, one male Jan. 9, and one male Feb. 20. These, with at least a dozen other specimens handled in the flesh, were all in the adult plumage. A number were also observed in the woods during the winter, and from the numerous remains of their feasts on Grouse and Quail, the game must have suffered greatly during their stay. Have one record also for 1906, an adult female, taken Nov. 10. One specimen was also seen June 3, 1911. The identification of this specimen was positive, as it flew across in front of me, giving a good view of the breast.

4. **Accipiter cooperi**. COOPER'S HAWK.—As this hawk is generally considered as a summer resident only, the following record may be of interest. An adult male in full plumage taken Feb. 5, 1907, in Sumpter, Sauk County.

5. **Buteo lineatus lineatus**. RED-SHOULDERED HAWK.—While this species is far from common, a few pairs breed in the heavy timber along the Wisconsin River, and Honey Creek in Sauk County. A nest, four young in the downy stage, and one addled egg taken May 18, 1911; an adult male and female and three partly feathered young taken June 15, 1913.

6. **Falco peregrinus anatum**. DUCK HAWK.—A nest of this hawk was located May 10, 1911, on a ledge on the face of a nearly perpendicular sandstone bluff, overlooking the Wisconsin River, on the Sauk County side. The nest was only a slightly hollowed out spot in the sand, overlaying the sandstone, and contained two eggs. Ten days later the adult female, one egg and one downy young were collected. Mr. Bert Laws, a keen observer, who lives just across the river from this bluff, and who was instrumental in the location of the nest, tells me that nearly every season, for about twenty-five years to his knowledge, a pair of these birds have nested on this, or one of the adjoining bluffs. This pair made no attempt to defend their nest, but flew about screaming. The female struck and chased away a Red-tail Hawk, whose circling brought it too close to the Duck Hawk eyrie. These Red-tails had their nest on a rock ledge of another bluff less than a



quarter of a mile down the river, the only nest of the Red-tail that I have seen in such a location. The Red-tail is a common nesting species, all through the well timbered sections of this region, while the Duck Hawk has only been recorded as breeding in Wisconsin a very few times.

7. ***Aquila chrysaetos***. GOLDEN EAGLE.—Specimens of this eagle are not infrequently taken in Sauk County during the winter. A large female in my possession was taken in Feb., 1908, another, a male, was taken Feb. 23, 1909. That this species nested in Sauk County prior to 1908, there can be no doubt. There was a deserted nest still in good state of preservation on a sheltered ledge about sixty feet above the ground, on the same bluff where the Duck Hawks were found breeding. It was littered with feathers of pigeons, ducks and other birds, and evidently the Duck Hawks found it a convenient place in which to eat their game. This nest was typical of the Golden Eagle, made principally of juniper limbs, some of which were over an inch and a half in diameter. Mr. Bert Laws, who frequently saw the birds and described them to me, informed me that the nest was used for one or two seasons prior to 1908. Before that time they had used a nest on an adjoining bluff, which was destroyed. I have seen specimens of the Golden Eagle on two occasions in the Baraboo Bluffs, in early summer.

8. ***Cryptoglaux acadica acadica***. SAW-WHET OWL.—Rather rare in Sauk County. One specimen taken March 4, and one on March 23, 1907.

9. ***Phloeotomus pileatus abieticola***. NORTHERN PILEATED WOODPECKER.—A number of these fine birds still nest in the heavy river timber along the Wisconsin River, both in Sauk and Dane counties, and will doubtless hold their own till the original stand of timber is cut away, as they are extremely wary, especially in fall and winter, and breed in the mosquito infected river bottoms where they are seldom molested. There are only a few scattered patches of suitable woodland left in this region however, and those are fast disappearing. Have never observed them or signs of their work in the Baraboo Bluffs, which are heavily wooded, and in this region at least, they are almost wholly confined to the river timber, though family parties of four or five may be observed occasionally in late summer, somewhat out of their usual range. Have only two nesting records though they have frequently been observed during the breeding season. May 31, 1911, a male and female and three young were taken from a broken-off river birch-stub. Nest about twenty-five feet from the ground in partly flooded river bottom on the Sauk County side. June 11, 1913, another pair and three nearly fledged young were taken from a similar site on the Dane County side of the river. This nest was situated about thirty feet from the ground in an old and very brittle birch, which broke off at the base as soon as I started to climb, though the tree was nearly a foot and a half in diameter. The birds undoubtedly find this "punk" wood very easily worked, as they had excavated an unusually large cavity, measuring entrance hole, three and a fourth by four and a half inches, with a total depth of twenty-three inches, and an average diameter of seven by nine

inches, narrowing somewhat nearer the bottom. As soon as the nesting stubs were jarred, the young commenced their "hissing" noise, similar to young Flickers, but a great deal louder.

10. **Melanerpes carolinus.** RED-BELLIED WOODPECKER.—This handsome species is a fairly common resident in certain favorable localities, in the heavy bottom land timber along the Wisconsin River, and Honey Creek, in the same locality frequented by the Pileated Woodpeckers. Quite often observed in the village of Prairie du Sac, during the winter. A male and female and three partly feathered young were collected on the Dane County side of the river June 1, 1911. This nest was in a small and very hard dead limb of an elm tree, over a slough. The entrance hole was on the under side of the limb which extended from the tree at an angle of about forty-five degrees.

11. **Empidonax virescens.** ACADIAN FLYCATCHER.—This species was found breeding in considerable numbers along small water courses in the Baraboo Bluffs in June and July, 1913. A series of nine adults and a number of nests collected. Was much pleased to find this bird breeding in this region as Kumlein and Hollister (Birds of Wisconsin Hypothetical List, 1903, p. 129) say of this species, "We have never taken this species in Wisconsin, and all the observers with whom we have had correspondence, have also failed to find it. Hoy and some later writers include it in their lists, but evidently, without positive proof. The fact that Hoy appears to have been somewhat mixed on his flycatchers, as indeed many at that time were, and that all recent collections fail to produce a specimen, although furnishing both varieties of *traillii*, whereas Hoy included but one, of course, leads us to believe that a mistake has occurred, and so we await future developments."

12. **Hesperiphona vespertina vespertina.** EVENING GROSBEEK.—Have observed this species only during the winter of 1909, when they were quite common in the months of February and March, when a number of specimens were collected. The birds were observed to spend a great deal of time feeding on the winged seeds of the box-elder.

13. **Carpodacus purpureus purpureus.** PURPLE FINCH.—Seen occasionally in spring and fall, but appears to be rather rare. One adult male collected from a flock of five or six that were feeding on Juniper berries, February 23, 1909.

14. **Bombycilla garrulus.** BOHEMIAN WAXWING.—This species visited Sauk County in large numbers in the winter of 1908-09. One flock estimated two hundred, seen March 1, and a number of specimens in high plumage were secured.

15. **Protonotaria citrea.** PROTHONOTARY WARBLER. In the partly flooded river timber, on both the Sauk and Dane County sides of the Wisconsin River, this beautiful warbler breeds rather numerous in certain restricted areas. In two days, June 9 and 11, 1913, five nests were located containing eggs or newly hatched young; four of these nests being located in dead river birch stubs over water, and the fifth in a dead maple stump near a slough.

16. **Vermivora pinus.** BLUE-WINGED WARBLER.—This rare Wisconsin warbler probably breeds in the Baraboo Bluffs and possibly also in the river bottoms, in suitable localities; at least the following records would seem to indicate that such is the case, though no nests were located. A pair collected June 22, 1913, and a female in the same locality June 24, and one male each, June 9 and 11, in the Dane County river bottoms.

17. **Vermivora chrysoptera.** GOLDEN-WINGED WARBLER.—Two broods of young of this species, just able to fly, were observed in the Baraboo Bluffs, July 1, 1913. Have also the following records of specimens collected in Sauk County: adult male, June 12, adult female June 22, and a pair, July 1, 1913.

18. **Dendroica cerulea.** CERULEAN WARBLER.—Near the source of Otter Creek in the Baraboo Bluffs, there are large tracts of tall timber, principally of hard maple, basswood and oak, growing on the level, and rather swampy ground, between the hills. In this region, the Cerulean Warbler is a common summer resident, and undoubtedly breeds, though I did not succeed in locating any nests. A number of specimens were collected, (May 30 to July 3, 1913) nearly all of which were the easily located males, only one female being secured.

19. **Dendroica fusca.** BLACKBURNIAN WARBLER.—As a migrant, this species is fairly common at times in the Baraboo Bluffs, but I have only two summer records. One adult male being secured June 27, and another July 1, 1913.

20. **Oporornis formosa.** KENTUCKY WARBLER.—Two specimens of this rare species (for Wisconsin) were seen June 9, 1913, and one adult male was collected. As the actions of the birds strongly indicated that there was a nest in the vicinity, a very careful search was made, but without result. Kumlein and Hollister (*Birds of Wisconsin*, 1903, p. 117) give seven records of this species, six of which were for Lake Koshkonong, in spring.

21. **Icteria virens virens.** YELLOW-BREASTED CHAT.—Have only one record for this species, an adult male, collected in Dane County, June 13, 1913. A few were also heard.

DESCRIPTION OF A NEW SUBSPECIES OF THE  
WESTERN MEADOWLARK

BY S. F. RATHBUN.

SOME time ago my attention was called to certain apparent peculiarities in the meadowlarks inhabiting the coast region of the State of Washington. Since that time I have been able, by special efforts, to gather together a considerable series from the Pacific slope of Washington and Oregon, which series now clearly shows that the bird from this region is subspecifically distinct from that of the interior of the United States. In view of this fact it becomes necessary to separate it formally, and I therefore propose to call it

***Sturnella neglecta confluenta*, subsp. nov.**

## NORTHWESTERN MEADOWLARK.

CHARS. SUBSP.—Similar to *Sturnella neglecta neglecta*, but the bars on tail and tertials broader and much more confluent; upper parts darker throughout, and their black areas more extensive; yellow of under parts averaging darker; spots and streaks on the sides of breast, body, and flanks larger and more conspicuous.

DESCRIPTION.—Type, adult male, No. 105, collection of S. F. Rathbun; Seattle, Washington, April 5, 1895; S. F. Rathbun. Upper parts mixed blackish, dark brown, umber, and buffy; pileum with a broad central streak of cream buff; tail brownish gray, broadly barred with brownish black, the bars on all but the terminal portion of the rectrices much confluent, the outer three pairs of tail-feathers extensively white; wings fuscous, all the feathers margined with pale brown, the tertials heavily barred with blackish, the greater wing-coverts more narrowly barred on their exterior webs with blackish brown; edge of wing yellow; supraloral stripe, breast, abdomen, chin, and throat, rich yellow, this color extending laterally over the greater portion of the malar region; superciliary stripe dull cream buff; breast and jugulum with a broad crescent of black; sides, flanks, and crissum, buffy or whitish, broadly streaked with dark brown and blackish; sides of breast with large brownish black spots; lining of wing dull white.

GEOGRAPHICAL DISTRIBUTION.—Pacific coast region of southwestern British Columbia and northwestern Washington, south to northwestern Oregon, and east to the Cascade Mountains.

In the color pattern of wings and tail this new subspecies of *Sturnella neglecta* is curiously similar to *Sturnella magna*, but of course its other characteristics readily distinguish it from that species. This new race is of particular interest in view of the fact that heretofore no subspecies of *Sturnella neglecta* have been distinguished; but *Sturnella neglecta confluenta* is fully as well marked a form as the subspecies of *Sturnella magna*, and practically none of the specimens in our extensive series cause any difficulty whatever in identification. The confluence of the bars on the tail is probably the best subspecific character, but the general coloration of the upper parts makes it readily distinguishable in both summer and winter plumage. There is no difference in size.

A specimen from Comox on Vancouver Island, British Columbia, in the collection of the Biological Survey of the Department of Agriculture, belongs undoubtedly to this race; and I have traced it as far south as Salem, Oregon. It possibly occurs as well farther south along the coast of Oregon. All breeding specimens of *Sturnella neglecta* from east of the Cascades prove to belong to the typical race, so that its limit of distribution eastward is fairly presumed to be this range of mountains.

The type of *Sturnella neglecta*<sup>1</sup> was obtained by Audubon at old Fort Union, North Dakota, and birds from the Great Plains region have been considered as typical in our comparisons. All names applied to this species pertain without doubt to the interior form, which is typical *Sturnella neglecta neglecta*, and therefore the race from the northwestern coast of the United States here distinguished is entitled to a new name as above given.

I am indebted to the kindness of Mr. J. M. Edson, of Bellingham, Washington, and to the University of Washington, for the loan of some of the specimens used in the preparation of this paper, and I wish here to express my sincere thanks for their courtesy.

Thirty specimens of *Sturnella neglecta confluenta* have been examined from the following localities:

British Columbia — Comox.

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<sup>1</sup> Audubon, Birds Amer., oct. ed., VII, 1843, p. 339, plate 489.



Washington — Bellingham, Whatcom Co.; Auburn, Duvall, North Bend, Seattle, Snoqualmie, King Co.; Kiona Benton County<sup>1</sup>; Enumclaw, Tacoma, Pierce Co.; Olympia, Thurston Co.

Oregon — Forest Grove; Bush Lake near Salem; North Salem.

Measurements in millimeters of *Sturnella neglecta confluenta* are as follows:

No. & Collection.	Sex.	Locality.	Date.	Wing.	Tail.	Exposed culmen.	Tarsus.	Middle toe without claw.
105, S. F. Rathbun	♂	Seattle, Wash.	Apr. 5, 1895	125	76	34	39	24
920, S. F. Rathbun	♂	Olympia, "	Sept. 25, 1916	122	79	32	37	27
921, S. F. Rathbun	♂	Tacoma, "	Oct. 8, 1911	118	77	33.5	36.5	28
922, S. F. Rathbun	♂	Auburn, "	Sept. 21, 1916	132	82	32	36	26
923, J. M. Edson	♂	Bellingham, "	Mar. 7, 1915	125	80	31	36.5	27.5
139400, U. S. N. M.	♂	Comox, B. C.	June 11, 1895	127	75	34	35.5	27
112, S. F. Rathbun	♀	Seattle, Wash.	Apr. 21, 1895	108	62	28	34.5	26.5
924, S. F. Rathbun	♀	Enumclaw, "	Sept. 21, 1916	110	65	28	34	24.5
925, S. F. Rathbun	♀	Auburn, "	Sept. 21, 1916	109	65	30	36	25
926, S. F. Rathbun	♀	Duvall, "	Oct. 4, 1916	111.5	70	30	35	23
1107, Univ. Wash.	♀	Salem, Oregon	Mar. 16, 1891	115	67.5	29.5	36	26
Average of six adult males				124.8	78.2	32.8	36.8	26.6
Average of five adult females				110.7	65.9	29.1	35.1	25.

## DESCRIPTION OF *TELESPIZA ULTIMA* FROM NIHOA ISLAND.

BY WILLIAM ALANSON BRYAN.

CONTINUING my note on the discovery of a new land bird on the island of Nihoa, which appeared in the January, 1916, number of 'The Auk,' I am now able to report that through the interest of Lieut. W. H. Munter, specimens have been secured which on comparison with the "Laysan finch," *Telespiza cantans* Wilson, fully warrant the separation of the Nihoa birds under the new name that was only withheld in my former article for want of a definite type specimen.

In view of the fact that the species under consideration is

<sup>1</sup> Not breeding at this locality.



very liable to be the last native passerine bird to be discovered in the Hawaiian Group, the following name seems appropriate for this form occurring on remote Nihoa: viz.,

***Telespiza ultima*, new species.**

TYPE.—♂ ad. (orig. no. 1), Nihoa Island, Hawaiian Group, February 12, 1916. Collected by Lieut. W. H. Munter for W. A. Bryan.

PARATYPES.—(a) ♀ (orig. no. 2), do. do.; (b) ♂ (orig. no. 3), do. do.; (c) sex ? (orig. no. 4), do. do.; (d) (orig. no. 5), specimen in formalin.

SPECIFIC CHARACTERS.—Closely resembling the Laysan species (*T. cantans*) in color but smaller in all dimensions; upper and lower mandible approximately equal in length.

DESCRIPTION OF TYPE.—(Fully adult male specimen.) Head all round and under parts to the middle of the abdomen yellow, brightest on the breast, brighter than equally adult specimens of *cantans*. Back, olive-yellow, varied with darker shaft-stripes; rump, gray, with an olive cast; upper tail coverts, olive-gray to yellowish; webs of tail feathers and primaries, brownish black, narrowly edged with yellow; wing coverts, yellowish; center of abdomen, whitish; under tail coverts, yellowish-white.

MEASUREMENT OF TYPE.—Total length, 5.65 in.; wing, 3.05; tail, 2.20; tarsus, .85; culmen, .52; depth of bill, .42.

*Remarks.* This species, occupying the restricted habitat of one of the smaller and older volcanic islands of the group, has evidently been evolved through isolation from the only other existing species of the genus, a well known form occurring abundantly on the low sand island of Laysan and which in recent years has also been introduced on Midway Island.

I am indebted to Lieut. W. H. Munter for the type series, consisting of five specimens, which he secured for me on the last cruise of the U. S. R. C. "Thetis" to the Leeward Islands all of which are included in the Hawaiian Islands Bird Reservation. The birds are described as being quite fearless and were easily killed with small shot. The specimens were preserved in formalin provided for the purpose and four have since been made up as dry skins. The three cabinet specimens not described above present the following measurements in inches;

Orig. no. 2, ♀	length	5.50;	wing	2.80;	tail	2.05;	tarsus	.85;	culmen	.50.
" " 3, ♂	"	5.60;	"	3.00;	"	2.20;	"	.90;	"	.53.
" " 4, ?	"	5.50;	"	2.90;	"	2.05;	"	.85;	"	.50.

Of this series number 2 is in the characteristic immature plumage of the Laysan species having the feathers of the head and breast blackish-brown with yellowish edges. Number 4 is more nearly mature while number 3, is only slightly less brilliant in coloring about the head and neck than the type specimen.

It will be seen by comparing the measurements and description given above, with that given in my 'Key to the Birds of the Hawaiian Group,' that the Nihoa birds are in reality a somewhat dwarfed form of the Laysan species which, owing to isolation and restricted habitat, is to be regarded as specifically distinct.

The Nihoa "finch" is a stocky, independent creature much resembling the Grosbeaks in size and appearance. Like their Laysan cousins they sing very sweetly, their song resembling that of the canary. In habit they are saucy, sociable and fearless and are so unsuspicious that they approach to within a few feet of the observer without hesitation.

On arriving at Nihoa on February 12, 1916, the landing used by the "Thetis" on the occasion of its 1915 cruise was found to be too rough to use with safety. A landing was made however in a small cove a few hundred feet to the eastward of the old landing in the following manner. One of the boat's party swam ashore, and a line was heaved from the stern of the boat and the boat then hauled close to the rocks. At a favorable opportunity the rest of the party were landed without mishap. The boat's crew then rigged a line fitted with a running rove through a block at the mast head. Dry clothing, ammunition, cameras and other articles were whipped ashore and the dinghy shifted its anchorage to a safe distance to await the return of the party.

After four hours on the island the party returned to the vessel without accident bringing with them photographs, notes and specimens of the fauna and flora that are of great interest and value.

DESCRIPTION OF A NEW SUBSPECIES OF THE  
BROAD-WINGED HAWK.

BY B. H. BAILEY.

***Buteo platypterus iowensis*, subsp. nov.**

IOWA BROAD-WINGED HAWK.

DESCRIPTION.— Head, neck, body, and tibial flags, sooty brown with a slightly rufous cast due to very faint rufous edgings on the feathers. Back, and top of the head, somewhat darker. The feathers of the upper surfaces of the wings slightly worn and somewhat lighter at their margins. Concealed bases of the feathers of the head, snow white; elsewhere bases of the feathers grayish white. Each feather shows a distinct black shaft. Under tail coverts when disturbed show three or four alternating light and dark bands.

Wings: Three outer primaries deeply emarginate on the inner webs. Lining of the wings in general the same color as the body, except at the bases of the first three or four primaries of each wing, where there are a very few whitish feathers, each crossed by about four dusky bands. Exposed parts of the primaries dusky above with no evident banding; below, however, they are whitish on the inner webs, and crossed by five narrow dark bars. The tips of the primaries from below for an inch and a half appear almost black.

Spreading the secondaries they show from above, on their inner webs, sharp contrasting bars of white and dusky, which appear much less distinct on the under surface.

Tail: Exposed surface above crossed by three dark bars of the same color as the back, which alternate with two narrower grayish white bands with a narrow tip of the same color. From below, these markings are less distinct. The inner webs of the outermost tail feathers show more numerous indistinct bars.

MEASUREMENTS OF TYPE.— Length (skin) 16.50 in. 41.8 cm.; wing, 11.62 in. 29.5 cm.; tail, 7.18 in. 18 cm.; tarsus, 2.44 in. 6.2 cm.; culmen, .80 in. 1.9 cm.

Type No. 918, Coe College Museum, Cedar Rapids, Iowa; sex (?); locality, Eagle Lake, Hancock County, Iowa; date, Fall 1907; collector, James Ward.

Paratype, No. 45, collection of W. Kubichek, Iowa City, Ia., sex, male; locality, Iowa City, Iowa; date, April 21, 1913.

Paratype, collection of A. J. Anderson, Sioux City, Iowa; date, October 30, 1893; sex (?); locality, 12 miles east of Des Moines, Iowa; collector, A. J. Anderson.

The latter paratype is in immature plumage.

The first mentioned paratype differs in coloration very little from the type, the most noticeable variation being the more evident banding of the upper tail coverts and flank feathers, noticed only when these are displaced. The second paratype as it is in the immature plumage, is characterized by a tail crossed on the exposed upper surface by three narrow and one wider sub-terminal dusky band, alternating with four wider dusky gray bands and a narrow tip of the same color. The lateral tail feathers show six dark bars, alternating with lighter ones, on their inner web. The feathers of the breast in particular, and of other parts to a less degree are definitely margined with rufous, so that a decided reddish cast is given to the under part of the body. At a distance however, the immature bird cannot be distinguished from either of the other specimens which are adults.

In reviewing the birds of prey of Iowa, my attention had been called to the occurrence of these dark plumaged individuals of the Broad-winged Hawk.

Mr. Robert Ridgway described the first noticed specimen under the title "Description of a Melanistic Specimen of *Buteo latissimus* (Wils.)," in the Proceedings of the United States National Museum, Vol. IX, Oct., 1886, pp. 248-249.

In 1912 Mr. F. L. Burns monographed this species *B. platypterus platypterus* in The Wilson Bulletin, Vol. XXIII, Nos. 3 & 4, 1911. In this monograph an adult male, *B. platypterus iowensis*, is described but not named, which was taken at Portage la Prairie, Manitoba, May 30, 1900.

In the Proceedings of the Iowa Academy of Science, Vol. XIX, 1912, pp. 193-194, the writer described the specimen which is here presented as the type of a new subspecies.

Mr. Ridgway mentions that two other birds similar to the one he describes were seen by Mr. Preston in 1874 and 1884 respectively, near where the first bird secured in 1883 was taken.

Mr. F. L. Burns says, "Worthen mentions one specimen from Minnesota, of a solid dark umber, showing dark bars on tail and primaries; and Seton another collected by A. Calder, April, 1907, Winnipeg, Manitoba, sex not stated." He says also "On Feb. 23, 1908, Mr. J. H. Riley saw a very dark bird pass almost directly

overhead at Falls Church, Virginia. He informs me that he had a fairly good look at it, and that it had some white on the breast, but appeared to be very dark otherwise; whether upon being shot it would be as dark as it appeared, it would be hard to say."

At least three interesting facts are to be noticed with regard to these published accounts of dark colored Broad-wings.

First they have all been either collected or observed, except the somewhat doubtful Virginia record, in a limited area extending north and south from Winnipeg and Portage la Prairie, through Minnesota and middle Iowa, the natural route of migration.

In the second place so far as the writer has been able to ascertain, there are no intergrading specimens. Those that have been examined are very similar in general color not excepting the one before me in immature plumage.

A third point of interest is the evident dusky character of the plumage of the immature, which has hitherto been unknown.

Thanks are due to Mr. James Ward through whose kindness the type specimen was secured, and to Mr. Kubichek and Mr. Anderson for permitting the examination, at some length, of their specimens.

THIRTY-FOURTH STATED MEETING OF THE  
AMERICAN ORNITHOLOGISTS' UNION.

BY JOHN HALL SAGE.

THE Thirty-fourth Stated Meeting of the American Ornithologists' Union convened in Philadelphia, Pa., Monday evening, November 13, 1916. The business meetings were held in the Council Room and Library, and the public sessions, commencing Tuesday, November 14, and lasting three days, in the lecture hall of the Academy of Natural Sciences.

**BUSINESS SESSION.** The meeting was called to order by the President, Dr. Albert K. Fisher. Twenty-three Fellows and fourteen Members were present. The Secretary's report gave the membership of the Union at the opening of the present Stated Meeting as 830, constituted as follows: Fellows, 46; Retired Fellows, 3; Honorary Fellows, 11; Corresponding Fellows, 55; Members, 77; Associates, 638.

Since the last meeting (May 1915) the Union suffered great loss by the death of several prominent members. The list includes, four Fellows, two Honorary Fellows, one Corresponding Fellow, two Members, and fifteen Associates, as follows:

Dr. Daniel Giraud Elliot,<sup>1</sup> a Founder and the second President of the Union, who died in New York City, December 22, 1915, in his 81st year; Prof. Wells Woodbridge Cooke,<sup>2</sup> a Fellow, who died in Washington, D. C., March 30, 1916, aged 58 years; Prof. Foster E. L. Beal,<sup>3</sup> a Fellow, who died in Branchville, Md., October 1, 1916, in the 77th year of his age; Lieut. Col. Edgar Alexander Mearns,<sup>4</sup> a Founder, who died in Washington, D. C., November 1, 1916, in his 61st year; Henry Eeles Dresser,<sup>5</sup> an Honorary Fellow, who died in Cannes, France, November 28, 1915, in his 78th year;

<sup>1</sup> For an obituary notice, see Auk, XXXIII, pp. 230-231; also Memorial Address in the present number.

<sup>2</sup> For an obituary notice, see Auk, XXXIII, pp. 354-355.

<sup>3</sup> For an obituary notice see the present number.

<sup>4</sup> For an obituary notice see the present number.

<sup>5</sup> For an obituary notice see Auk, XXXIII, p. 232.



John A. Harvie-Brown,<sup>1</sup> of Stirlingshire, Scotland, an Honorary Fellow, who died July 26, 1916, at the age of 72 years; Lieut.-Col. Edward A. Butler,<sup>2</sup> a Corresponding Fellow who died April 16, 1916, at Stokesby, England; Ewen Somerled Cameron,<sup>3</sup> a Member, who died in Pasadena, Cal., May 25, 1915, in the 61st year of his age; Egbert Bagg,<sup>4</sup> a Member, who died in Utica, N. Y., July 11, 1915, at the age of 65 years; and the following Associates: Miss Mary Bissell Ferry,<sup>5</sup> who died in Norwalk, Conn., March 18, 1915, in her 66th year; Samuel Thorne, of New York City, who died July 4, 1915; Prof. Frederic Ward Putnam,<sup>6</sup> who died in Cambridge, Mass., August 4, 1915, in the 77th year of his age; Prof. Donaldson Bodine,<sup>7</sup> who died at Douglas Lake, Michigan, August 26, 1915, in his 49th year; Linsley Louin Jewel,<sup>8</sup> who died at Saranac Lake, N. Y., September 5, 1915, in his 38th year; Dr. James C. Wilson, of Boston, Mass., who died there January 5, 1916; Rev. William Rogers Lord, who died in Dover, Mass., February 2, 1916, aged 68 years; Leslie Waldo Lake,<sup>9</sup> who died in Hamburg, N. Y., February 7, 1916, in the 67th year of his age; De Lagnel Berier, of Ridgewood, N. J., who died February 11, 1916; Mrs. Jane L. Hine,<sup>10</sup> who died in Sedan, Ind., February 11, 1916, in her 85th year; Miss Caroline P. Latimer, who died in Brooklyn, N. Y., April 19, 1916; Dr. Sven Magnus Gronberger,<sup>11</sup> who died in Washington, D. C., April 24, 1916, in his 51st year; John Claire Wood,<sup>12</sup> who died in Detroit, Michigan, June 16, 1916, aged 45 years; Charles Edgar Conklin, of Roslyn, N. Y., who died September 8, 1916, and Walter R. Zappey, who died in Cambridge, Mass., February 20, 1914. (Information about the death of this party only recently reached the Secretary.)

The report of the Treasurer showed the finances of the Union to

<sup>1</sup> For an obituary notice see Auk, XXXIII, p. 458.

<sup>2</sup> For an obituary notice see the present number.

<sup>3</sup> For an obituary notice see Auk, XXXII, pp. 540-541.

<sup>4</sup> For an obituary notice see Auk, XXXII, p. 540.

<sup>5</sup> For an obituary notice see the present number.

<sup>6</sup> For an obituary notice see Auk, XXXII, p. 541.

<sup>7</sup> For an obituary notice see the present number.

<sup>8</sup> For an obituary notice see Auk, XXXIII, p. 459.

<sup>9</sup> For an obituary notice, see Auk, XXXIII, p. 233.

<sup>10</sup> For an obituary notice, see the present number.

<sup>11</sup> For an obituary notice, see Auk, XXXIII, p. 355.

<sup>12</sup> For an obituary notice, see Auk, XXXIII, pp. 459-460.

be in a satisfactory condition, the accounts being audited by a Certified Accountant.

All of the officers were re-elected as follows: Albert K. Fisher, President; Henry W. Henshaw and Witmer Stone, Vice-Presidents; John H. Sage, Secretary; Jonathan Dwight, Treasurer; Ruthven Deane, William Dutcher, Joseph Grinnell, Frederic A. Lucas, Wilfred H. Osgood, Chas. W. Richmond, and Thos. S. Roberts, members of the Council.

James H. Fleming, Toronto, Canada; Harry S. Swarth, Berkeley, Cal.; and W. E. Clyde Todd, Pittsburgh, Pa.; were elected Fellows. Sergius Alexandrovich Buturlin, Wessenberg, Esthonia, Russia; Prof. Dr. Max Fürbringer, Heidelberg, Germany; and Dr. Hans Friedrich Gadow, of Cambridge, England; were elected Honorary Fellows. Dr. William L. Abbott, Philadelphia, Pa.; David Armitage Bannerman, London, England; Dr. Valentine Bianchi, St. Petersburg, Russia; Dr. Roberto Dabbene, Buenos Aires, Argentina; Alwyn Karl Haagner, Pretoria, South Africa; Robert Hall, Rest Harrow, Hobart, Tasmania; Dr. Einar Lönnberg, Stockholm, Sweden; Dr. Percy R. Lowe, The Hatch, Windsor, England; Dr. Auguste Ménégaux, Paris, France; and Harry Forbes Witherby, of Hampstead, England; were elected Corresponding Fellows. F. Seymour Hersey, Taunton, Mass.; A. Brazier Howell, Covina, Cal.; and J. Eugene Law, of Hollywood, Cal.; were elected to the class of Members, and the following one hundred and seventy persons were elected Associates:

Charles Pons Aimar, M.D., Charleston, S. C.  
Mrs. Amelia S. Allen, Berkeley, Calif.  
Stanley Clisby Arthur, New Orleans, La.  
Mrs. Clarence A. Aspinwall, Washington, D. C.  
Harold Lester Babcock, M.D., Dedham, Mass.  
Dr. Wm. Frederic Badé, Berkeley, Calif.  
Aaron C. Bagg, Holyoke, Mass.  
Egbert Bagg, Jr., Utica, N. Y.  
S. Prentiss Baldwin, Gates' Mill, Ohio.  
Clifford Mann Balkam, Colorado Springs, Colo.  
Ira Barrows, Sea Bright, N. J.  
Marion William Batchelor, Kansas City, Mo.  
James F. Beal, Ann Arbor, Mich.  
Benjamin Franklin Bemis, Gleasondale, Mass.  
A. J. Blake, Corvallis, Oregon.

Mrs. Emma T. Bodine, Crawfordsville, Ind.  
Dan H. Bowman, Mizpah, Mont.  
Howarth Stanley Boyle, New York City.  
Joseph S. Briggs, Norristown, Pa.  
Charles D. Bunker, Lawrence, Kas.  
E. Ray Burton, Delaware, Ohio.  
Chalmers S. Brumbaugh, Baltimore, Md.  
Prof. Walter Guyton Cady, Middletown, Conn.  
Henry A. Caesar, New York City.  
Chas. L. Camp, Berkeley, Calif.  
George G. Cantwell, Puyallup, Wash.  
Hall Bryant Carpenter, Somerville, Mass.  
Eugene S. Catron, Portland, Oregon.  
Omar P. Chase, Andover, Mass.  
Mrs. Arthur E. Clarke, Manchester, N. H.  
Miss Mary S. Clarke, Bristow, Va.  
George J. Cooke, Ambler, Pa.  
Julian Dana Corrington, Ithaca, N. Y.  
Clifford Cronk, Monterey, Mass.  
Haskell Brooks Curry, Boston, Mass.  
William Shepard Dana, Mastic, Long Island, N. Y.  
Stuart T. Danforth, East Jaffrey, N. H.  
Chas. E. Dankers, Corning, Mo.  
Harold K. Decker, West New Brighton, N. Y.  
William M. Derby, Jr., Chicago, Ill.  
Homer R. Dill, Iowa City, Iowa.  
Joseph Scattergood Dixon, Berkeley, Calif.  
Miss Helen Dwise, Washington, D. C.  
Wm. L. G. Edson, Rochester, N. Y.  
William Otto Emerson, Hayward, Calif.  
Evan M. Evans, New York, N. Y.  
Arthur Farquhar, York, Pa.  
Allan Hart Faxon, Southbridge, Mass.  
Dudley B. Fay, Boston, Mass.  
Mrs. E. S. Finney, St. Davids, Pa.  
Thomas M. Fitzpatrick, Brookline, Mass.  
Edward Fleischer, Brooklyn, N. Y.  
Charles Benton Floyd, Auburndale, Mass.  
Mrs. Annie Middaugh Folger, Devils Lake, No. Dak.  
Nathan Chandler Foot, M.D., Hyde Park P. O., Mass.  
Frank B. Foster, Haverford, Pa.  
Henry J. Fry, Germantown, Pa.  
Walter Fry, Three Rivers, Calif.  
Henry C. Fuller, Washington, D. C.  
Dr. Julius Garst, Worcester, Mass.  
Edward N. Goding, Boston, Mass.

Walter A. Goeletz, Ravinia, Ill.  
Luther J. Goldman, Berkeley, Calif.  
Charles Crawford Gorst, Cambridge, Mass.  
Alfred M. Gould, Malden, Mass.  
Mrs. Adele Lewis Grant, Columbia, Calif.  
George M. Gray, Woods Hole, Mass.  
Mrs. Anna K. Grow, Lebanon, N. H.  
Charles Overton Handley, Lewisburg, W. Va.  
John L. Harvey, Waltham, Mass.  
Richard E. Harrison, New Haven, Conn.  
Miss Sadia Haskell, Washington, D. C.  
Dr. Royal Hatch, Wellesley, Mass.  
Theodore L. Hermann, West New Brighton, N. Y.  
Mrs. Eleanor Hitchcock, Waterbury, Conn.  
Oliver W. Holton, Ithaca, N. Y.  
Charles B. Horton, Pittsburgh, Pa.  
Isaac Chester Horton, Canton, Mass.  
Irving R. Hough, Meriden, Conn.  
Clarence Anebresen Hubbard, Portland, Oregon.  
Prof. Marian E. Hubbard, Wellesley, Mass.  
Ralph Hubbard, Ithaca, N. Y.  
Prof. James Franklin Illingsworth, Honolulu, H. I.  
Edwin Leroy Jack, Portland, Maine.  
Alphonse Jay, Los Angeles, Calif.  
Dr. Harris Kennedy, Readville, Mass.  
Frederick S. Kingsbury, Needham, Mass.  
Louisa W. Lasell, Cliftondale, Mass.  
Roy A. Latham, Orient, L. I., N. Y.  
Mrs. Lawrence Lee, Albuquerque, New Mexico.  
Claude Willard Leister, Ithaca, N. Y.  
Aldo Leopold, Albuquerque, New Mexico.  
Nathan Leopold, Jr., Chicago, Ill.  
Hoyes Lloyd, Toronto, Ontario, Canada.  
Thomas Henry Lord, Mattapoisett, Mass.  
Henry Joseph Lund, San Jose, Calif.  
Mrs. A. B. McMillen, Albuquerque, New Mexico.  
Douglas C. Mabbott, Washington, D. C.  
Miss Hazel MacDonald, Kersey, Colo.  
Alfred Marshall, Chicago, Ill.  
Miss Janet Martin, Milford, Conn.  
John B. May, M.D., Cohasset, Mass.  
Mrs. Edith Clark Maynard, Northampton, Mass.  
Miss M. Mead, Winnetka, Ill.  
Mrs. Elisabeth C. T. Miller, Cleveland, Ohio.  
Enos A. Mills, Estes Park, Colo.  
Mason Mitchell, Apia, Samoa.

Harry Lee Moody, Lake Wilson, Minn.  
Raymond Wheatley Moore, Kensington, Md.  
Walter C. Newberry, Winnemucca, Nev.  
Miss Elizabeth Nichols, Providence, R. I.  
Miss Eleanor G. Noble, Cambridge, Mass.  
Edward Norris, Philadelphia, Pa.  
Robert R. Ozmer, Decatur, Ga.  
R. H. Palmer, Pocatello, Idaho.  
Edward Ludlow Parker, Concord, Mass.  
Mrs. Frederic H. Pattee, Evanston, Ill.  
Earl L. Poole, Reading, Pa.  
W. F. Provo, Wickliffe, Ohio.  
Nelson D. W. Pumyea, Mt. Holly, N. J.  
Milton Smith Ray, San Francisco, Calif.  
H. Severn Regar, Norristown, Pa.  
Alex. Reed, Washington, Pa.  
Mrs. Victor M. Reichenberger, New York City.  
Robert Riddle, Philadelphia, Pa.  
S. Earl Riddle, Chester, Pa.  
Harry Rief, Seattle, Wash.  
Mrs. John R. Rogers, Brooklyn, N. Y.  
Oscar Frederick Schaefer, Flagstaff, Ariz.  
Julius Jacob Schneider, Anaheim, Calif.  
Samuel Scoville, Jr., Haverford, Pa.  
H. A. Scullen, Ames, Iowa.  
William R. Sears, Boston, Mass.  
William J. Serrill, Haverford, Pa.  
Henry S. Shaw, Jr., Dover, Mass.  
Harley B. Sherman, Ann Arbor, Mich.  
G. L. Shirley, Dayton, Va.  
Thomas Silsbee, Boston, Mass.  
James Silver, Washington, D. C.  
M. P. Skinner, Yellowstone Nat. Park, Wyoming.  
Lester W. Smith, Meriden, Conn.  
Mrs. Wallis Craig Smith, Saginaw, Mich.  
Richard P. Stapleton, Holyoke, Mass.  
Tracy Irwin Storer, Berkeley, Calif.  
Mrs. Herman F. Straw, Manchester, N. H.  
Mrs. A. B. Stroup, Albuquerque, New Mexico.  
J. A. Sweeney, Halsey, Neb.  
Samuel A. Tatnall, Philadelphia, Pa.  
August F. Taylor, Fowler, Colo.  
Dr. Walter P. Taylor, Washington, D. C.  
Warner Taylor, Madison, Wisc.  
Frank Milton Ruthven Thackaberry, Tampico, Ill.  
J. Walcott Thompson, Salt Lake City, Utah.

Miss Julia A. Thorns, Asheboro, N. C.  
Robie Wilfrid Tufts, Wolfville, Nova Scotia.  
Mrs. David C. Twichell, Albuquerque, New Mexico.  
Henry Lorenz Viereck, Washington, D. C.  
Mrs. William R. Walton, Albuquerque, New Mexico.  
Dr. Geo. A. Webster, Boston, Mass.  
T. Walter Weiseman, Emsworth, Pa.  
Charles Spangler Weiser, York, Pa.  
Dr. Otto Westerfeldt, San Francisco, Calif.  
Mrs. India Taylor Whaler, Princeton, N. J.  
Mrs. James W. Wheeler, Tucson, Ariz.  
Charles Livy Whittle, Cambridge, Mass.  
William Henry Wiegmann, M.D., New York City.  
Nelson E. Wilmot, West Haven, Conn.  
Miss Elizabeth M. Winch, Canton, Mass.  
Mrs. Henry Martyn Witter, Worcester, Mass.  
George B. Wood, M.D., Philadelphia, Pa.

A committee of five from the membership of the Union will soon be appointed to obtain contributions to a permanent endowment fund for research and publication in ornithology.

**PUBLIC SESSIONS.** *First Day.* The meeting was called to order by the President, Dr. Fisher. An address of welcome was made by Dr. Samuel G. Dixon, on behalf of the Academy of Natural Sciences.

The papers of the morning session were as follows:

'In Memoriam — Daniel Giraud Elliot,' by Dr. Frank M. Chapman.

'In Memoriam — Wells Woodbridge Cooke,' by Dr. T. S. Palmer.

'A New Name for an Old Friend,' by Harry C. Oberholser. Read by Dr. Palmer in the absence of the author.

'The Life and Writings of Professor F. E. L. Beal,' by W. L. McAtee.

'Bird Migration in Central Africa,' by James P. Chapin, Illustrated by lantern slides.

'Bird Casualties,' by Mrs. E. O. Marshall.

A letter was read by Prof. Paul Bartsch in relation to a memorial fountain to Prof. Wells W. Cooke which it is proposed to erect in the grounds of the Smithsonian Institution, Washington, D. C.

The first paper of the afternoon was:



'Meadowlark Duets,' by Henry Oldys. Illustrated by whistled songs of meadowlarks.

Next came 'An Ornithological Reconnaissance in South America,' by Dr. Frank M. Chapman.

The remaining papers, both illustrated by lantern slides, were: 'Photographing Gulls at the Panama-Pacific Exposition,' by Joseph Mailliard.

'Concerning Bird Banding,' by Howard H. Cleaves.

In the evening members of the A. O. U., and the Delaware Valley Ornithological Club, with their friends, met at dinner at "The Roosevelt," 2027 Chestnut St., Philadelphia — one hundred and forty-four persons being present. An unique feature, immediately following the dinner, was the display, on a screen, of pictures depicting prominent ornithologists from the juvenal to adult plumage!

*Second Day.* The meeting was called to order by the President. The papers of the morning session were:

'Woodcraft and Sparrow-proof Bird Boxes,' by Ernest Thompson Seton.

'What Determines the Length of Incubation,' by Dr. W. H. Bergtold.

'A Review of the Diving Petrels (Pelecanoididæ),' by Robert Cushman Murphy and Francis Harper. Presented by Mr. Murphy.

'Two Birds from the Gulf of California,' by Dr. Paul Bartsch. Illustrated by lantern slides.

'Exhibition of Hybrid Ducks with Comments,' by Louis Agassiz Fuertes. Remarks followed by Messrs. Deane and Murphy, Drs. Stone, Bergtold, Bishop, and Bartsch, and the author.

'Attempts to record with the camera the food of some native birds,' by Edward Howe Forbush. Illustrated by lantern slides.

'The Nesting of the Cock of the Rock,' by Leo E. Miller.

'Field notes on *Chunga burmeisteri*,' by Howarth S. Boyle.

The following papers were presented at the afternoon session, Vice President Stone in the chair, all but one being illustrated by motion pictures:

'The Home Life of our Common Birds,' by Herbert K. Job.

'Bird Reservations of the Gulf Coast,' by Herbert K. Job.

'Some problems with every day Birds,' by Dr. Arthur A. Allen. Illustrated by lantern slides.

'Gannets of Bonaventure Island, Gulf of St. Lawrence,' by Percy A. Taverner. Presented by Dr. Frank M. Chapman.

'Wild Geese at Jack Miner's place, Kingville, Ont.,' by Percy A. Taverner. Presented by Edward Howe Forbush.

'Home Life of Various Minnesota Birds,' by Dr. Thos. S. Roberts.

In the evening the visiting members of the Union attended a reception and smoker in the Ornithological rooms of the Academy.

*Third Day.* The meeting was called to order by the President.

The papers of the morning were:

'Bird Study and Life,' by W. Leon Dawson.

'Geographical Distribution of Color in the Genus *Junco* and its significance as a Test of Species,' by Dr. Jonathan Dwight.

'The Shedding of Stomach Lining by Birds, particularly as Exemplified by the Anatidæ,' by W. L. McAtee. Illustrated by lantern slides.

'Some Relationships of the North American Passeres,' by Dr. Spencer Trotter. Illustrated by lantern slides.

At the afternoon session, Vice-President Stone in the Chair, the following papers were presented:

'Personalia in Ornithology — Report of the Committee on Biography and Bibliography,' by Dr. T. S. Palmer.

'Birds of the Athabaska and Great Slave Lake Region,' by Francis Harper. Illustrated by lantern slides.

'Our Eastern Flycatchers and their Nesting Sites,' by William L. Baily. Illustrated by lantern slides.

'Washington Coast Bird Reservations,' by Prof. Lynds Jones.

'Notes on the External Structure of Woodpeckers,' by W. DeWitt Miller. Remarks followed by the Chair.

The following papers, in the absence of the authors, were read by title:

'In Audubon's Labrador,' by Dr. Chas. W. Townsend.

'Notes on some British Guiana Birds,' by C. William Beebe.

'Notes on Long Island Birds,' by Ludlow Griscom.

'Notes on Long Island Birds,' by Robert Cushman Murphy, and John Treadwell Nichols.

'Bird Day in the Querigua Forest, Guatemala,' by Samuel N. Rhoads.

Resolutions were adopted thanking the Academy of Natural Sciences for the use of the hall for a place of meeting for the Union, and for other courtesies extended; to the Local Committee and other Philadelphia ornithologists for the cordial welcome and most generous hospitality shown visiting members and friends of the Union during its Thirty-fourth Stated Meeting, and to the Zoölogical Society of Philadelphia for its kind invitation to visit the Gardens of the Society.

After the adoption of the resolutions the President, Dr. Fisher, spoke of the attention paid the visiting members of the Union by the local ornithologists, and voiced the sentiment of all that the sessions just closing were the most interesting and enjoyable since the foundation of the Union.

On Friday, November 17, after adjournment of the Union, Dr. Spencer Trotter conducted a party to "Mill Grove," on the Perkiomen, the former home of Audubon and to "Fatland Ford" the former home of Mrs. Audubon. The same day Messrs. J. Fletcher Street and Samuel Scoville, Jr., acted as guides for a party visiting the Pine Barrens of New Jersey. On Saturday, November 18, several members of the Union went to the grave of Alexander Wilson in the Old Swedes Church Yard on Water Street, Philadelphia and the Bonaparte house where the ornithologist once resided was also visited.

The registered attendance of members at the Stated Meeting just closed was larger than ever before, and the number of new members elected will please every one interested in the continued success of the Union.

The next meeting of the Union will be held in Cambridge, Mass. in 1917, the date to be determined by the local committee.

JOHN H. SAGE,  
*Secretary.*

## GENERAL NOTES.

**The Roseate Tern (*Sterna dougalli*) on Lake Michigan.**—On August 14, 1916, while watching the large number of terns congregated on the extreme southern end of Lake Michigan near Millers, Ind., an individual was noticed standing alone at the water's edge, which on being examined with field glasses, looked different from either the Forster's or the Common Tern, both of which were there in abundance. The specimen was collected, and proved to be an adult male Roseate Tern, in full breeding plumage. While the beautiful rosy tint on the breast was evident enough with the specimen in hand, it was not noticed while watching the bird on the beach. While this appears to be the first Lake Michigan record, it is not unlikely that careful watching would show an occasional wanderer of this species among the large number of terns that frequent this locality in fall. The skin is in the Harris Extension collection.—H. L. STODDARD, *N. W. Harris Public School Extension of Field Museum, Chicago, Ill.*

**Relationship of Florida Herons.**—I note in the October number of 'The Auk' which has just come to hand, on page 431 the statement that *Ardea herodias wardi* and *Ardea herodias wurdemanni* are both to be considered phases of *Ardea herodias occidentalis*.

My experience with the birds on the Florida Keys for the last five years leads me to believe that this dictum should not be adopted.

The Great White Heron of the Keys is so entirely different in its habits and psychological manifestation from the Great Blue Heron which occupies the same region that no one who knows the two birds in the field would believe that they were the same. The Great White Heron is of more social habits than the Blue Heron. You frequently see small groups of this species in a confined space. For example: on Duck Key, a small island less than sixty yards across, I found four of the Great White Herons. Then again there is a breeding colony on a small island in the lagoon on Chase's Key, which is used as a breeding ground exclusively by the Great White Heron.

The Great Blue Heron is more sparingly represented, and lacks the social habits of the white bird; that is, when not on its breeding ground.

I think that Mr. Oberholser's dictum is the correct one, and we should reserve the name *Ardea occidentalis* for the Great White Heron of the Florida Keys, and *Ardea herodias wardi* for the Great Blue Heron of that region.—PAUL BARTSCH, *U. S. National Museum, Washington, D. C.*

**A New Record for New England.**—This museum has obtained a specimen of the Mountain Plover (*Podasocys montanus* (Townsend)) taken at Chatham, Mass. It is an immature male and was shot on October 28 by Mr. A. E. Crowell. This bird was associated with some Black-breasted Plovers at the time.—W. SPRAGUE BROOKS, *Boston Society of Natural History.*

**Destruction of Passenger Pigeons in Arkansas.**—My friend, Mr. C. A. Willett of Hammond, La., sends me an interesting account of the destruction of Passenger Pigeons by a forest fire. Some years ago he was accustomed to board with Mr. and Mrs. Robert Booth of Garner, Arkansas. Mr. Booth was a great hunter and knew the country well. "Many a time," writes Mr. Willett, "he told me of the Wild Pigeons and how they filled the woods and he always insisted very positively that they all burned up. Mr. Booth died a few years ago but Mrs. Booth is still living. His story was as follows:

"Near Hickory Plains, Arkansas, some eight miles east of Beebe, White County, Ark., there was in the early days, a large pigeon roost. The timber, where the roost was, was all broken down from the weight of the birds that used it; the ground covered with litter, limbs, dry grass, dead trees, brush, etc. You can imagine what a hot fire such a place must have made. The weight of the birds was such that large trees had the branches stripped off them, and only the trunk was left standing, others were all split to pieces. All the big timber in this roost had been broken down. When hunters wanted pigeons in that section, they were in the habit of going to the roost at night and with guns, clubs, and poles, knocked down all they wanted.

"On this fatal night a party of hunters accidentally set fire to the woods, burning out the roost with all the pigeons. There was so much litter upon the ground that the fire burned an entire week. Pigeons would begin to come to the roost along about two o'clock in the afternoon, and keep it up until dark. They poured into that fire by the hundreds, keeping it up all week while that roost was burning. The ground was alive with naked pigeons that had the feathers singed off them, but which eventually died and ever since that fire there have been no more wild pigeons in Arkansas, so Mr. Booth positively insisted, and he was a hunter who was in the woods all the time, and when he was eighty years old, still had perfect eyesight and could read a paper without glasses.

"Now, I asked Mrs. Booth the last time I saw her, when this fire occurred. She said that they moved onto their farm in 1877, and as it now seems to her, they must have lived on it, before the roost burned, something like a year or two. This, as she figured it, would put the fire around the year 1879, but she is not positive as to this date.

"I think these facts should be investigated—the time this roost burned, for burn it did, the extent of the roost, and the date of the fire, all of which can no doubt be ascertained pretty accurately if some of the old settlers are still alive and no doubt some are."

This account seems worthy of publication and investigation by those who are in a position to secure more details of the catastrophe.—PAUL BARTSCH, *U. S. National Museum, Washington, D. C.*

**American Goshawks in Kansas.**—Eastern Kansas is being honored this fall by a visit from a flight of these beautiful hawks. The only other



occurrence in the State according to the records in the museum of the University of Kansas was a single specimen taken in Riley Co., February, 1878, by W. F. Allen. From October 27 of this year to the present date, November 20, the Museum has obtained nine specimens, three females and six males. I have reports of several that were killed and thrown away, and several live specimens were seen by a party from the museum.

The farmers report that they are killing their full grown chickens, but the contents of the stomachs of those received at the museum contained only rabbit.—C. D. BUNKER, *Museum of the University of Kansas, Lawrence, Kansas.*

**Arctic Three-toed Woodpecker** (*Picoides arcticus*) in Jefferson Co., N. Y.—While hunting Grouse and Woodcock near the village of Adams Center, Jefferson Co., N. Y., on October 20, 1916, I collected a female Arctic Three-toed Woodpecker. I was at once attracted by the call-note which was one I had not heard before. This bird is my first record of the species during the four or five years I have been observing the birds of Adams and the neighboring towns.—EDMUND J. SAWYER, *Watertown, N. Y.*

**The Earliest Name for the Nighthawk.**—*Caprimulgus virginianus* Gmelin (Syst. Nat., I, ii, 1789, 1028) is the long-established basis for our Nighthawk, the sources quoted by this author being Linnæus, Kalm, Brisson, Catesby, Edwards, Buffon, Pennant and Latham. The accounts of nearly all these writers, except Kalm (who made independent observations in New Jersey) are easily traced back to Catesby or Edwards. Catesby (Nat. Hist. Carolina, II, 1743, Appendix, 16, pl. 16) described and figured a bird from Virginia, which is unquestionably the Nighthawk, but the habits ascribed to it are those of the Whip-poor-will. Edwards (Nat. Hist. Birds, II, 1747, 63, pl. 63) gave a much better description and figure of probably the same individual, with which "Mr. Mark Catesby obliged" him. Both Catesby and Edwards introduced rictal bristles in their figures, probably because the only species then known possessed them, and the characters of the genus *Caprimulgus* required them as one of the features to distinguish it from *Hirundo*. Edwards, however, made no mention of rictal bristles in the minute description furnished by him.

So much for the basis of Gmelin's *Caprimulgus virginianus*, supposedly the earliest name for the Nighthawk. Some years before Gmelin, however, J. R. Forster published his 'Catalogue of the Animals of North America.' This was issued in 1771, and is of little importance at this date, but it contains two or three new names for birds, one of them being *Caprimulgus minor*, p. 13, based on "C. III. 16.," meaning Catesby (as Forster explains on p. 5), Appendix, p. 16. As this Catesby reference is the chief basis of Gmelin's name, it follows that *Caprimulgus minor* Forster is of equal pertinency, and our Nighthawk should be known as *Chordeiles minor minor*, while the subspecies from the Greater Antilles, now called



*Chordeiles virginianus minor* Cabanis, will become *C. v. gundlachii* Lawrence.—CHAS. W. RICHMOND, Washington, D. C.

**A New Name for *Onychospiza* Prjevalski.**—*Onychospiza* Prjevalski (Mongol. i Strana Tangut., II, 1876, 81), based on *O. taczanowskii* of the same author, has been generally lumped with *Montifringilla* Brehm, 1828, and the species name has been synonymized with *M. mandelli* Hume. Recently, however, Bianchi (Annuaire Mus. Zool. Acad. Imp. St.-Petersb., XII, 1907 (1908), 555) has recognized *Onychospiza* as a distinct genus, and in his paper (on the forms of the genera *Montifringilla*, *Pyrgilauda* and *Onychospiza*) has, I believe, pointed out the priority of *O. taczanowskii* (summer of 1876) over *M. mandelli* (Hume, Stray Feathers, IV, Dec., 1876, 488). The recognition of *Onychospiza* recalls the action of Rey (Synon. Eur. Brutvögel und Gäste, 1872, 216), who altered *Onychospina* Bonaparte, 1853, to *Onychospiza*, effectually preoccupying the use of the same term in another sense. I therefore suggest *Onychostruthus* as a substitute for *Onychospiza* Prjevalski, with *Onychospiza taczanowskii* as the type.—CHAS. W. RICHMOND, Washington, D. C.

**The Migrant Shrike near Boston.**—On September 4, 1916, I saw a Migrant Shrike (*Lanius ludovicianus migrans*) in Brookline, Mass., near the West Roxbury (Boston) line. The bird was in an open pasture, and I followed it about for some time, saw it at close range, and positively identified it. It was very active, flying about from boulder to fence-post and swooping to the ground after insects, probably grasshoppers. Mr. Brewster, in 'Birds of the Cambridge Region' (1906) cites but four records for the species within ten miles of Boston, and I find no later records in 'The Auk.'—FRANCIS H. ALLEN, West Roxbury, Mass.

**Philadelphia Vireo (*Vireosylva philadelphica*) in Massachusetts in Autumn.**—On September 17, 1916, I shot a young female Philadelphia Vireo in Harvard, Mass. The specimen is now in my collection (No. 682). By a curious coincidence the bird was shot less than 500 yards from the spot where I took one about a year previous (Auk, XXXIII, p. 78).—JAMES L. PETERS, Harvard, Mass.

**Wilson's Warbler (*Wilsonia pusilla pusilla*) in Massachusetts in December.**—On December 3, sunny, light northwest wind, mercury about forty, I discovered a male Wilson's Warbler in the Arnold Arboretum, Boston. The bird was in a berry-bearing bush, barberry I think, but did not seem to be feeding on the berries but about the branches and twigs. He was in full color, very brilliant — of course seeming more so in the gray world of December, and appeared to be in the best of health and spirits. In the same bush was a White-throated Sparrow and across the drive, the Mockingbird which has lived there for some years. While I was watching

the warbler I was joined by two other parties of bird-students who offered to bear witness, as we all had an excellent view of the bird.— MRS. GEORGE H. MELLE, *Newton Highlands, Mass.*

**A Remarkable Case of Bird-feeding.**— This year, 1916, the House Wrens appeared on April 30, and presently a pair of them took possession of a bird box nailed to a disused poultry house at the rear of the lot. May 27, there was one egg in the nest. June 3, there were seven eggs, neatly concealed by feathers fastened upright in the rim of the nest and curving inward. June 14, there were four young, looking like wine-colored grub-worms, and three eggs. Later all the eggs hatched. June 23, when the older ones were nine days old, the parents fed them 34 times between 6.30 and 7.30 A. M. and at least half the hour was spent in trying to drive away six or eight English Sparrows that hung over the edge of the poultry house peering down at the nest, alighting on the lid and ledge of it, and manifesting the most excessive and persistent curiosity concerning the young which were keeping up a constant clamoring for food.

At first while the nest was being built and before the young were hatched, the parents made little fuss when another bird or a person approached, bestowing most of their scolding upon two cats that prowled around. But their anxiety grew with the development of their young and they protested more and more at every disturbance, both of them nipping the sparrows and following me and the cats with their angry chatter.

On June 24, the parents fed 21 times between 6.30 and 7 A. M. and again spent much of the time in fighting the sparrows which were even more impudent than before, peering into the opening of the box and remaining stubbornly upon the ledge in spite of the peckings they received.

On the afternoon of June 25, the young were fed 86 times between 4.40 and 5.40, and I discovered that the feeding was now done by one bird, the male, who no longer had time either to scold or to sing. Only five times in the hour did he utter a brief twitter, and from the twenty-fifth to the seventieth trip the feeding was incessant. He had discovered a rich feeding ground close by and neither sparrows nor cats interrupted him. Moreover, he did his best to keep the nest clean; but this, as we afterward ascertained was too much for him. He had to neglect his housekeeping to fill the seven hungry mouths.

That evening and the next day, by going near, we made sure that the female bird was missing, probably caught by the cats. But the work of the male so far surpassed that of other birds we had been watching that the matter was reported to Mr. Sperry, Assistant in the Nature Study Department of the Western Illinois Normal, and on June 28, the last day the birds would be in the nest, he and members of his class watched by turns. He himself came at 3.45 A. M. to begin the tally on a large sheet spaced for each hour and each hour space divided into quarters. A clock stood beside the watchers.

At 4.15 the Wren came out of a small elm where he had spent the night

and began his last day of service which must have been an arduous one after his previous three days of unaided toil. The record for the first hour ending at 5.15 was 85. In the last quarter before 8 P. M. there were but four trips with food. Toward the close of the day the young sometimes came out of the box in their eagerness to get their morsel. This is the tally by hour for the fifteen hours and forty-five minutes: 85, 99, 88, 79, 93, 111, 78, 70, 98, 74, 56, 59, 44, 72, 80, 31,—a total of 1217 for one bird. This must be a world record. Nowhere can we find more than 750 feedings accredited to both parent wrens working together.

Early one morning during the incubation, I tallied the male wren's twitters, and this is the record per minute: 9, 7, 9, 9, 8, 2,—7, 6,—10, 5, 8, 2,—8, 7, 7,—10, 10, 7,—6. Sometimes the pause was for the fraction of a minute; sometimes longer for flight.—CLARA KERN BAYLISS, *Macomb, Ill.*

**A Mockingbird in New Hampshire.**—A Mockingbird (*Mimus polyglottos*) appeared near my home on the outskirts of Manchester, N. H., November 5, 1916, apparently accompanying a flock of Robins; and stayed in the neighborhood two days. It was seen by Mr. Lewis Dexter, and by a number of other bird lovers whom I was able to notify. It did not act like an escaped cage bird, as it did not care to have me approach closer than thirty or forty feet, although we could not rule out the possibility.

I have not seen a caged Mockingbird in this region for years.

Allan's 'List of the Birds of New Hampshire' mentions one record for New Hampshire and that is the only one I have been able to find.—WILLIAM R. VARICK, *Manchester, N. H.*

**Acadian Chickadee at Rhinebeck, N. Y.**—On November 6, 1916, I observed an Acadian Chickadee (*Penthestes hudsonicus littoralis*) for several minutes feeding within seven feet of me among dead aster-tops. It was accompanied by several Black-capped Chickadees, but appeared tamer and entirely at ease.

This is the first visit from the species since the winter of 1913-14, when several were observed in Dutchess County. The earliest noted in 1913 appeared on November 27 and, so far as I know, this year's visitor establishes an early record for this latitude, barely ninety miles north of New York City.—MAUNSELL S. CROSBY, *Rhinebeck, N. Y.*

**The Acadian Chickadee on Long Island.**—On November 13, 1916, an Acadian Chickadee (*Penthestes hudsonicus littoralis*) was seen at Hewlett, Long Island. I do not report the occurrence on my own personal observation but on that of my daughter, thirteen years of age, who did not know the bird; nevertheless I make myself responsible for the record which, as will be seen, is quite free from the possibility of error. It rests primarily on the account of a competent observer who is alive to the moral necessity of accuracy in bird matters and apprehends perfectly the impassable difference between *might be* and *is* in the determination of a bird's identity.

The Acadian Chickadee was in the shrubbery bordering Willow Pond in Hewlett Park associating, but not intimately, with Black-capped Chickadees and Kinglets and finally descending alone to bathe at the shore of the lake. Watching it the observer suddenly became mystified and excited — it was not a Black-capped Chickadee! What then could it be? The momentary impression was of a "Chickadee with something missing, like a person lacking an arm or a leg." What was wanting was quickly discovered to be the black cap, the top of the head being dull brown, scarcely darker in shade than the brownish back, and at strong contrast with the black throat; the wings were darker than those of the Black-capped Chickadee, and the sides below the wings were dark chestnut brown even deeper in color than the underparts of a Red-breasted Nuthatch. All this, related to me, left nothing to be asked for in the way of description. But there was further confirmation. The bird's notes were not at all those of the Black-capped Chickadee, and a description and imitation of them were quite realistic, enough to send my memory back to the first and only Acadian Chickadee that I had ever met with. This was near Lake Terror in the Adirondacks in company with Dr. C. Hart Merriam, October 31, 1882, when the very distinctive notes of the bird were what alone drew attention to it. The specimen is still in my collection and was instantly recognized by my daughter as being nearly identical with the bird she had so carefully studied in life the same afternoon.

The species has not before been reported from Long Island or the vicinity of New York, nor from further south, I think, than Poughkeepsie on the Hudson (Bird-Lore, XVI: 448-449, Maunsell S. Crosby).

It seems well to give early announcement of this occurrence that other observers near New York may be put on watch. The early date of the bird's appearance seems to hint that the species may be repeating the southward migration that has excited so much attention in recent winters, and that the movement is progressive and has this year reached a more southern point than at any time before.—EUGENE P. BICKNELL, *New York City*.

**Alaska Hermit Thrush in Northeastern Illinois.**—While hunting for Crossbills in the pine barrens at Beach, Lake County, Illinois, November 5, 1916, I secured a specimen of *Hylocichla guttata guttata*, which was in a juniper along Dead River. It proved to be an adult male, and measured before skinning, length 5.75 in., extent 10 in., wing 3.62 in., tail 2.75 in., culmen .40 in. (Coll. H. K. C. No. 20455).

I have recently compared this bird with specimens from the West Coast in the collections of Dr. Dwight and the U. S. National Museum, and find them to be identical. Dr. Dwight and Mr. Oberholser have also kindly identified the specimen for me.—HENRY K. COALE, *Highland Park, Illinois*.

**Winter Birds at Newton Highlands, Massachusetts.**—We are enjoying a remarkable flight of winter birds seldom seen here. Already

(December 4, 1916) Siskin's (*Spinus pinus*), Acadian Chickadees (*Parus hudsonicus littoralis*), Redpolls (*Acanthis linaria linaria*) American and white-winged Crossbills (*Loxia curvirostra minor* and *L. leucoptera*), Pine Grosbeaks (*Pinicola enucleator leucura*), Evening Grosbeaks (*Hesperiphona vespertina vespertina*), Snow Buntings (*Plectrophenax nivalis nivalis*), Snowy Owl (*Nyctea nyctea*), and Rough-legged Hawks (*Archibuteo lagopus sancti-johannis*) are here, many of them in much greater abundance than for many years.— MRS. GEORGE H. MELLE, *Newton Highlands, Mass.*

**Evening Grosbeak** (*Coccothraustes vespertina vespertina*) **at Cinnaminson, N. J.**— On December 3, 1916, Mr. Charles Evans of Cinnaminson, near Riverton, N. J., found two Evening Grosbeaks feeding on his lawn. He recognized them at once by a colored plate of the species which he had, but supplemented this identification with a direct comparison with the description in Chapman's 'Handbook.' The birds were exceedingly tame and would scarcely get out of his way. Cinnaminson is only eight miles above Philadelphia on the opposite side of the Delaware River and this constitutes the first record of the species south of Plainfield, Fair Haven and Princeton from which places it is recorded in 'Bird-Lore,' for 1911 and 1913. The Cinnaminson birds are therefore the most southern recorded occurrence for this interesting species.— GEORGE SPENCER MORRIS, *Olney, Philadelphia, Pa.*

**Clarence Henry Morrell — A Correction.**— In the 'Ten Year Index to the Auk,' p. XIX, 1915, the birth place of Clarence Henry Morrell is given as Pittsfield, Me., and the date of birth as Feb. 23, 1872. These data were obtained from an obituary notice by Mr. J. M. Swain in 'The Auk' for 1902, p. 423. My attention was recently called to a more extended biographical sketch of Mr. Morrell in the 'Journal of the Maine Ornithological Society,' V, pp. 7-12, 1903, also prepared by Mr. Swain, stating that Mr. Morrell was born at River Hobart, Nova Scotia, Feb. 27, 1872. This statement Mr. Swain advises me is correct and the place and date originally published in 'The Auk' are erroneous.— T. S. PALMER, *Washington, D. C.*



## RECENT LITERATURE.

**Index to 'The Ibis' 1895-1912.**<sup>1</sup>— This bulky volume is the third 'Index-volume' of 'The Ibis,' the others covering respectively the years 1859-1876, and 1877-1894. Unlike the custom adopted by 'The Auk,' 'The Ibis' issues a separate 'Subject Index' at the end of every series (six volumes) so that no entries of authors or subjects appear in the work before us. The size of the volume is greatly increased by the indexing of every species under both species and genus and of every trinomial name under subspecies, species and genus, there being no cross references whatever.

To anyone who has constant occasion to consult the files of 'The Ibis' this index is invaluable and ornithologists the world over owe a debt of gratitude to Messrs. Henry Peavot and Thomas Wells who compiled it and to Mr. W. L. Slater, the editor.— W. S.

**Noble on the Resident Birds of Guadeloupe.**<sup>2</sup>— Mr. Noble spent the summer and early fall of 1914 on Guadeloupe Island in the French West Indies, collecting in the interest of the Museum of Comparative Zoölogy, and the present report covers the results of his work. Forty-six species are listed accompanied by extensive notes on relationship, habits and abundance, while several introductory pages summarize the topography of the island, the vertebrate fauna and the present status of the bird life. The four species of parrots, were the earliest land birds to be exterminated, having been killed in large numbers by the natives. The Coot and Rail have apparently disappeared also, though their extirpation is to be laid to the mongoose rather than to human agency. The other extinct species is the Diablotin or Black-capped Petrel, which, according to the "oldest inhabitants" has not been seen since the great earthquake of 1847. Mr. Noble nevertheless is able to discuss the relationship of the Guadeloupe petrels at considerable length on the basis of four specimens in the Lafresnaye collection secured in Guadeloupe in 1842 by L'Herminier. These curiously enough belong to two different species, the smaller of which seems to correspond best with Kuhl's description of *Procellaria hasitata* while the larger is *P. diabolica* of Lafresnay. Mr. Noble further thinks it probable that the North American specimens of '*A. hasitata*' will be found to be *A. diabolica*.

The Laughing Gulls of the Antilles and Bahamas are found to be uniformly smaller than those from the mainland and Mr. Noble proposes to separate the latter as *Larus atricilla megalopterus* (Bruch). The Grackles

<sup>1</sup> Index of Genera and Species referred to, and an Index to the Plates in 'The Ibis' (Seventh, Eighth and Ninth Series), 1895-1912. Edited by William Lutley Slater, M. A. London, 1916. pp. 1-513. Price, £1 12s. 6d.

<sup>2</sup> The Resident Birds of Guadeloupe. By G. K. Noble. Bull. Mus. Comp. Zool., LX., No. 10. August, 1916. pp. 359-396.



of Guadeloupe and Martinique are found to differ so very little in size that in the absence of any other character he thinks they should be united, and *Holoquiscalus martinicensis* Ridgway become a synonym of *H. guadeloupensis* (Lawrence). Ridgway's *Cichlherminia coryi* Mr. Noble considers to be the adult of *C. herminieri*, his series of twenty-four specimens showing a gradual change from one to the other.

A study of a series of *Tiaris bicolor* from Grenada, St. Vincent and Barbados shows that they represent a distinct race which is described as *Tiaris bicolor expectata* (p. 385), Grenada.

Dr. A. H. Clark's view that the races of *Dendroica ruficapilla* from Cozumel, Curaçao and St. Andrews are not separable from the typical form is endorsed.

The same view is taken of the Antillean races of the Green Heron recently described by Oberholser and Mr. Noble regards all Green Herons from Cuba to Grenada as referable to one subspecies. *Podilymbus podiceps antillarum* is still however, regarded as a valid race.

Mr. Noble's paper is carefully prepared and is a welcome and valuable addition to the literature dealing with the West Indian avifauna.—W. S.

**Cherrie on the Ornithology of the Orinoco Region.**<sup>1</sup>—This is an annotated list of some 571 species and subspecies based on collections made by the writer with the addition of such species as have been reported by Berlepsch and Hartert in their 'Birds of the Orinoco Region' (Nov. Zool. IX, 1902) and other more recent papers. The manuscript was completed some five or six years ago but on account of many complications its earlier publication was impossible. While the author has endeavored to bring it up to date, he states that it is not as complete as might be desired. Nevertheless it forms a very welcome and satisfactory review of the wonderfully rich avifauna of this region and the omissions are not noticeable.

There are keys for the determination of the genera, species and subspecies of each family, while the synonymy of each form gives the original place of publication and reference to Berlepsch and Hartert or to other publications. Valuable notes on habits and distribution are given under various species as well as critical discussion of nomenclature and relationship. Apparently only one new form is described in Mr. Cherrie's paper—*Hypolophus canadensis intermedius* (p. 277) Caicara, Venezuela.

Mr. Cherrie's paper adds one more to the faunal studies of South American birds which are beginning to appear after the bewildering preliminary descriptions of new forms, and he is to be congratulated upon a piece of important work, well done.—W. S.

**Recent Papers by Rothschild and Hartert.**—In the last issue of 'Novitates Zoologicae' Dr. Ernst Hartert has published a number of

<sup>1</sup>A Contribution to the Ornithology of the Orinoco Region. By George K. Cherrie. Science Bulletin, Mus. Brooklyn Inst., Vol. 2, No. 6. September 1, 1916. pp. 133-374.

short papers of interest to systematists. He calls attention <sup>1</sup> to the distinctness of the Venezuelan form of *Rhodinocichla rosea* for which the name *vulpina* Hartlaub is available, making four races of this interesting bird. The Arabian Sea Tern, he renames <sup>2</sup> *S. repressa* (p. 288), type from Fao, Persian Gulf; the name *albigena*, by which it has been known, proving to be untenable. The record of *Arenaria melanocephala* for India based upon a specimen in the Philadelphia Academy received from Capt. Boys, is challenged <sup>3</sup> by Dr. Hartert as there is no definite proof that it came from India. This point seems to be well taken and the range in the A. O. U. Check-List should be revised accordingly. A study of the European Cormorant <sup>4</sup> results in the differentiation of two races—a larger, northern one, *Phalacrocorax carbo carbo* (L.), nesting on rocks, and a smaller, more southern one, *P. c. subcormoranus* (Brehm), nesting mainly on trees. Another paper <sup>5</sup> records a number of errors of synonymy and reference in Vol. XXV of the 'British Museum Catalogue.'

In conjunction with Lord Rothschild there is a review of some forms of *Coracina* (*Graucalus* Auct.) from the Solomon Islands.<sup>6</sup> *C. welchmani kulambangrae* (p. 289), Kulambangra, and *C. papuensis perpallida* (p. 290), Bougainville, are described as new. A new *Monarcha*, from Rossel Island is also described,<sup>7</sup> *M. cinerascens rosselianus* (p. 297).—W. S.

**Mearns on *Pardaliparus elegans*.**<sup>8</sup>—This carefully prepared paper adds another to the long series of similar reviews that have resulted from Dr. Mearns' studies of the extensive collections made by him in Africa and the Philippines. His untimely death shortly after the appearance of the present paper, has prevented his personal preparation of the comprehensive report to which these were but preliminary, a loss to science which will ever be deplored. It is to be hoped however, that some one else may complete this work as a fitting memorial to Dr. Mearns.

Seven races of *Pardaliparus elegans* are here differentiated of which *P. e. panayensis* (p. 57), Panay Isl., Philippines; *P. e. guimarasensis* (p. 58), Guimaras Isl., and *P. e. suluensis* (p. 59), Sulu Isl., are described as new.—W. S.

<sup>1</sup> On the Forms of *Rhodinocichla rosea*. By Ernst Hartert. *Novitates Zoologicae*, Vol. XXIII, p. 229. September, 1916.

<sup>2</sup> What is the Correct Name of the Arabian Sea Tern. By Ernst Hartert. *Ibid.* p. 288.

<sup>3</sup> The Alleged Occurrence of *Arenaria melanocephala* (Vig.) in India. By Ernst Hartert. *Ibid.*, pp. 291-292.

<sup>4</sup> On the European Forms of *Phalacrocorax carbo*. By Ernst Hartert. *Ibid.* pp. 293-295.

<sup>5</sup> More Erroneous Quotations and Other Errors. By Ernst Hartert. *Ibid.* pp. 295-296.

<sup>6</sup> On Some Forms of *Coracina* (*Graucalus* Auct.) from the Solomon Islands. By Lord Rothschild and Ernst Hartert. *Ibid.* pp. 289-291.

<sup>7</sup> A New *Monarcha* from Rossel Island. By Lord Rothschild and Ernst Hartert. *Ibid.* p. 297.

<sup>8</sup> On the Geographical Forms of the Philippine Elegant Titmouse, *Pardaliparus elegans* (Lesson), with Descriptions of three New Subspecies. *Proc. U. S. Nat. Mus.*, Vol. 51, pp. 57-65. October 16, 1916.

**Cooke's 'Second Annual Report of Bird Counts in the United States.'**<sup>1</sup>—This posthumous work of Prof. Cooke's is a further report upon an investigation which was originated by him and in which he was deeply interested. His idea was to obtain as many carefully made counts as possible of the number of birds breeding on definite areas of farm land and with these as a basis, estimate the actual number of breeding birds over much larger areas. No less than 315 counts were received for 1915, covering nearly all the States of the Union, but mainly as in 1914, from the northeast. A comparison of the reports from this region for the two years, we have as the average bird population for each 100 acres of the area covered, 119 pairs in 1914 and 125 pairs in 1915.

Many other interesting facts are demonstrated and while it is too early to draw detailed deductions the practicability and importance of this line of investigation are clearly shown, and it is to be hoped that the Biological Survey will continue the compilation of data on the lines which Prof. Cooke laid down.—W. S.

**Pearl and Curtis on Dwarf Eggs.**<sup>2</sup>—In this paper the character and cause of 'runt' eggs are discussed at great length. It seems that these dwarf eggs usually occur but once or twice in the history of one bird, and are generally due to some temporary stimulation and are not correlated with a morphological disturbance of the sex organs.

Some dwarf eggs are yolkless while others contain small yolks. While the authors' study has been based entirely upon eggs of the domestic fowl their conclusions undoubtedly apply to other birds as well.—W. S.

**Shufeldt's 'Osteology of Palaeornis, with other Notes on the Genus.'**<sup>3</sup>—In spite of a colored plate and numerous photographic reproductions of portions of the skeleton, this paper is disappointing, since one fails to get a clear idea upon what points the author bases his conclusion that *Palaeornis* and its allies "constitute a subfamily" of Psittacidae. There are detailed descriptions of the skeletal parts, most of which "seem to form no exception to the general rule for Psittaci," "are as in all of the Psittaci examined" etc. In other cases comparisons are made with *Ara* and *Amazona* and less frequently with *Cacatua* and *Conurus*, but nowhere is there a comparative table or a summary from which one can get the evidence.

The nomenclature used is a little unfortunate for while *Amazona* is rightly used instead of *Chrysotis*, the present day changes in the names

<sup>1</sup> Second Annual Report of Bird Counts in the United States with Discussion of Results. By Wells W. Cooke. Bull. 396, U. S. Dept. Agriculture. October 23, 1916. pp. 1-20.

<sup>2</sup> Studies on the Physiology or Reproduction in the Domestic Fowl—XV. Dwarf Eggs. By Raymond Pearl and Maynie R. Curtis. Jour. Agr. Research, VI, No. 25. September 18, 1916. pp. 977-1042, pll. CXII-CXIII.

<sup>3</sup> Osteology of Palaeornis, with Other Notes on the Genus. By R. W. Shufeldt. Trans. Royal Soc. of South Africa. Vol. V, pt. 5, June, 1916. pp. 575-591, pll. XXXIX-XLI.

*Palæornis* and *Conurus*, as adopted in Ridgway's 'Birds of North and Middle America,' are nowhere indicated. — W. S.

**Shufeldt on Fossil Birds.** — A portion of the right femur of a bird, larger than any now known in North America, which was found in Miocene (Salkehatchie Ooze) formation of the Stone River, South Carolina, is named by Dr. Shufeldt<sup>1</sup> who regards it as related to the *Anseres*, *Palæochenoides mioceanus* (p. 347).

In another paper<sup>2</sup> treating of the Bermuda 'bird-caves' he gives a popular summary of a much more comprehensive paper to appear later elsewhere. To this is added an 'Addendum' rather longer than the paper itself, in which new species based upon the bones found in the caves are described. These were intended for the later paper which is now indefinitely postponed, although references to the unpublished plates are here given! Unfortunately in two instances, no definite type specimens are designated in the descriptions and considering the number of species represented in the deposits and the fact that the new forms recently described in 'The Auk' (1916, pp. 194-195), probably represent some of them, serious questions of synonymy are likely to arise, which carelessness systematic work of this sort will further complicate. The new species named by Dr. Shufeldt are *Puffinus mcgalli* (p. 630), *P. parvus* (p. 632) and *Æstelata vociferans* (p. 633). Measurements are given under only one of the species and while the other descriptions refer in detail to the amount of material described and figured in the unpublished paper, it is questionable whether enough data are here presented to constitute a recognizable description. — W. S.

**Peters on a New Swift from Santo Domingo.**<sup>3</sup> — In working over the collection made in a trip to Santo Domingo during the winter and spring of 1916, in the interests of the Museum of Comparative Zoölogy, Mr. Peters finds the resident Collared Swift much blacker on the sides of the head than birds from Cuba and Jamaica and upon this difference establishes a new race, *Streptoprocne zonaris melanotis* (p. 37). — W. S.

**Riley on New Birds from Santo Domingo.**<sup>4</sup> — This paper describes three new birds recently obtained by Dr. William L. Abbott, of Philadelphia on an expedition to Santo Domingo, and presented to the U. S. National Museum. He visited the highlands of the interior where few zoölogical

<sup>1</sup> New Extinct Bird from South Carolina. By R. W. Shufeldt. Geological Magazine (VI) Vol. III, No. 626, pp. 343-347. August, 1916.

<sup>2</sup> Bird-Caves of the Bermudas. By R. W. Shufeldt. The Ibis. October, 1916. pp. 623-635.

<sup>3</sup> A New Swift from Santo Domingo. By James Lee Peters. Proc. N. E. Zool. Club, VI, pp. 37-38, Nov. 23, 1916.

<sup>4</sup> Three Remarkable New Species of Birds from Santo Domingo. By J. H. Riley. Smithsonian Misc. Collns. 66, No. 15. December 1, 1916, pp. 1-2.

collectors have ever penetrated and the birds discovered constitute as Mr. Riley says "the most remarkable discoveries in West Indian ornithology in recent years.

One of them is an owl related to a Cuban species, which is described as *Asio noctipetens* (p. 1), Constanza, 4000 ft. Another is *Brachyspiza antillarum* (p. 2), Constanza, 5000 ft., allied to *B. capensis* from the mainland, but constituting the first occurrence of the genus in the West Indies. The last and most remarkable is a White-winged Crossbill which was more or less common in the pine forest, at El Rio, 4000 ft. and which Mr. Riley names *Loxia megalaga* (p. 1). The occurrence of a member of this boreal genus, in the West Indies was entirely unlooked for and constitutes a most surprising fact in geographic distribution.—W. S.

**Townsend on Bird Conservation in Labrador.**<sup>1</sup>—This report is an "advance chapter" of the author's forthcoming work 'In Audubon's Labrador' and tells briefly of the terrible destruction of sea birds on the Labrador coast. Dr. Townsend suggests the forfeiting of fishing licenses by fishermen detected carrying fire arms or engaging in eggging, both of which are contrary to law. Another admirable suggestion is to make refuges of certain coast islands which could easily be protected by wardens and thus present object lessons to the natives and encourage similar protection elsewhere along the coast.—W. S.

**Gyldenstolpe on the Birds of Siam.**<sup>2</sup>—In this publication the author reports on the results of his second trip to Siam, 1914-1915. The main list consists in a fully annotated list of 353 species, one form *Mixornis gularis minor* (p. 60) Pak Koh, Northern Siam, is described as new. Other novelties obtained on the expedition have been described in the Ornithologische Monatsberichte for 1916, no copies of which have yet reached us, and Mr. Gyldenstolpe fortunately redescribes them here.

An introduction gives the explorer's itinerary and a consideration of the origin and development of the fauna of India and the Malay Region. Siam is divided zoogeographically into three regions (1) the mountain region of the north, (2) the lowlands of Northern and Central Siam and (3) Lower Siam. There are some admirable reproductions of photographs illustrating the scenery of the country and colored plates of five of the new forms of birds discovered by the expedition.

The report as a whole forms a valuable contribution to our knowledge of the avifauna of Siam and is a credit to its author.—W. S.

<sup>1</sup> Bird Conservation in Labrador. By Charles Wendell Townsend. Reprint from the Seventh Annual Report of the Commission of Conservation of Canada—Ottawa, 1916, pp. 1-9.

<sup>2</sup> Zoological Results of the Swedish Zoological Expeditions to Siam, 1911-1912 and 1914-1915. IV. Birds II. By Nils Gyldenstolpe. With one map, four plates and five figures in the text. pp. 1-160. 1916.



**Grönvold's Illustrations of the Birds of South America.**<sup>1</sup>—The plates prepared by Mr. Grönvold to illustrate Brabourne and Chubb's 'Birds of South America' are now issued in folders as Lord Brabourne's untimely death has prevented the continuance of the work.—W. S.

**Bryant on Food of the Road-runner in California.**<sup>2</sup>—In 1911 and 1912 when the California Fish and Game Commission collected material for a study of the economic status of the Western Meadowlark, a special effort was made also to obtain stomachs of Road-runners. Eighty-four were collected, and Dr. H. C. Bryant now reports upon their contents. The primary object of this investigation of the Road-runner was to learn the relation of this ground cuckoo to other birds and particularly to the Valley Quail of which it was said to be a serious enemy. It was found that only two of the 84 Road-runners had eaten birds. These constituted only 1.7 per cent of the total food. There are a number of field observations of Road-runners devouring birds, but Dr. Bryant concludes that "the evidence at hand here in California does not justify the wholesale destruction of the Road-runner on the ground of its being an enemy of quail or other bird life."

The almost omnivorous habits of *Geococcyx* are well illustrated by Dr. Bryant's analyses. The principal items of food, besides birds (already mentioned), are vegetable matter, about 10 per cent, chiefly seeds of *Rhus integrifolia*, orthoptera, 36.82 per cent, beetles, 18.2 per cent, lepidoptera, 7.5 per cent, bugs 5 per cent, hymenoptera 4 per cent, and reptiles 3.7 per cent. Spiders, scorpions, millipeds and centipeds also were devoured.

The published information on the food of the road-runner in California is quoted, and a full bibliography given. The paper is well illustrated also, by tables, diagrams and half-tones. There are some errors in the spelling of scientific names and lack of system in the lists of species of insects identified. The statement that "in this habit of feeding upon reptiles, the Road-runner is almost unique among birds, with perhaps the exception of certain hawks and owls" (p. 37), also is objectionable. In its present broad form the pronouncement obviously is inaccurate. Even had its application been definitely restricted to the United States, the statement would still be too comprehensive. The fact is there are few families of land birds, but have representatives among the reptile eating species. Among these are the Herons, Chuck-will's-widow, Woodpeckers, Flycatchers, Crows, Jays, Magpies, Meadowlarks, Grackles, Butcherbirds, Thrashers, Mockingbird, Wrens, and Thrushes. So small a bird as the Carolina Wren is an habitual lizard eater.

These are minor defects, however, and as it stands the paper is not only creditable to its author, but also is the best statement of the food of the Road-runner that has been published.—W. L. M.

<sup>1</sup> Illustrations to 'The Birds of South America.' By H. Grönvold. Parts I, II, III, IV.

<sup>2</sup> Univ. Calif. Publ. in Zool., 17, No. 5, pp. 21-58, pls. 1-4. October 26, 1916.



**British Board of Agriculture Reports on the Food of the Rook, Starling, and Chaffinch.**<sup>1</sup>—The present reports are based on the examination of the stomachs of 277 rooks, 748 Starlings and 527 Chaffinches by Professors F. V. Theobald and Wm. McGowan (pp. 1-49) and 332 Rooks, 662 Starlings and 490 Chaffinches by Professor H. S. Leigh (pp. 49-56). These investigators agree fairly well that the Rook (*Corvus frugilegus*) is more injurious than beneficial, that the Starling (*Sturnus vulgaris*) if not too abundant, is a friend of the agriculturist, and that the Chaffinch (*Fringilla cœlebs*) is about neutral so far as choice of food is concerned, but that a true estimate of its economic value depends upon the extent (as yet unknown) to which it distributes seeds of injurious plants. Details of the analyses are given.—W. L. M.

**Food of a Collection of South Australian Birds.**—On an expedition to the Musgrave Mountains in northwestern South Australia, Capt. S. A. White, preserved stomachs of 45 of the species of birds collected. The contents of these were analyzed by Mr. Arthur M. Lea of the South Australian Museum and analyses have been published in the report on the expedition.<sup>2</sup> These are among the most definite of notes on the food of Australian birds, and the report will be of great value to whoever attempts the task of assembling and generalizing all such information.—W. L. M.

**Recent Publications on Bird Conservation.**—Bulletins and reports on one phase or another of bird conservation are appearing so rapidly that it is possible only to mention them very briefly in this connection. The U. S. Department of Agriculture in Farmers' Bulletin No. 774<sup>3</sup> presents the usual summary of the game laws for 1916, while Senate Executive Document E. gives the text of the recent wild bird treaty with Canada. Massachusetts is well to the fore with valuable publications. A beautifully printed work<sup>4</sup> by Bradford A. Scudder is published by the Fish and Game Protective Association, presenting full information regarding methods of attracting and increasing the numbers of wild birds; while a bulletin<sup>5</sup> on the natural enemies of birds and a circular<sup>6</sup> on food plants to attract birds and protect fruit, both by Edward H. Forbush are issued by the State Board of Agriculture.

An especially noteworthy and welcome bulletin is issued by the Uni-

<sup>1</sup> Suppl. 15, Journ. British Bd. Agr., May, 1916. pp. VI + 56.

<sup>2</sup> Trans. Roy. Soc. South Australia, 39, 1915, pp. 760-766.

<sup>3</sup> Game Laws for 1916. By T. S. Palmer, W. F. Bancroft, and Frank L. Earnshaw. Farmers Bulletin 774, U. S. Dept. Agriculture. October 9, 1916. pp. 1-64.

<sup>4</sup> Conservation of Our Wild Birds. By Bradford A. Scudder. Massachusetts Fish and Game Protective Assoc., 748 Tremont Bldg., Boston, Mass. [1916], pp. 1-71.

<sup>5</sup> The Natural Enemies of Birds. By Edward Howe Forbush. Economic Biology Bull. 3, Massachusetts State Board of Agriculture. Boston, Mass., 1916. pp. 1-58.

<sup>6</sup> Food Plants to Attract Birds and Protect Fruit. By Edward Howe Forbush. Circular No. 49, *Ibid.* 1916. pp. 1-21.

versity of South Carolina entitled 'Decrease of Birds in South Carolina,'<sup>1</sup> by Belle Williams, secretary of the South Carolina Audubon Society. This presents reports from all over the State on the abundance of birds, enforcement of laws, etc., and covers effectively the whole problem of bird conservation in one of the states where educational work of this kind is sadly needed.

In 'Science' for September 15, Dr. Joseph Grinnell and Mr. Tracy I. Storer discuss 'Animal Life as an Asset of National Parks.'—W. S.

### The Ornithological Journals.

**Bird-Lore.** XVIII, No. 5. September–October, 1916.

Cardinals Through the Year. By Mrs. Robert G. Steele.

Protection of Migrating Birds in England. By W. W. Grant.—Describing the perches on lighthouses.

An Ancient Bird Census in Asphaltic Petroleum. By M. C. Frederick.—Account of the bird remains discovered in the La Brea deposits, Los Angeles, Cal.

Oregon Notes. By Sarah G. Pickins.

Winter Feeding-Stations at Highland Park, Rochester, N. Y. By W. L. G. Edson and R. E. Horsey.—Tabulates actual number of visits to feeding stations in one day. The Chickadees score was 1239!

Screech Owl Johnnie. By Florence M. Bailey.

The colored plate depicts four species of Thrasher, while the Audubon leaflet treats of the Avocet.

**The Condor.** XVIII, No. 5. September–October, 1916.

More Bird Notes from Big Bear Valley, San Bernardino Mountains. By W. M. Pierce.—Fourteen species.

Meeting Spring Half-way (cont'd). By Florence M. Bailey.—Corpus Christi to the Mexican Boundary.

A Hospital for Wild Birds. By Dr. W. W. Arnold.

Some Birds of the Fresno District, California. By J. G. Tyler.

Some Bird Notes from Humboldt Bay. By Joseph Mailliard.

Notes of the Golden Eagle in Arizona. By F. C. Willard.

**The Oölogist.** XXXIII, No. 9. September 15, 1916.

Relative to the Bald Eagle in Alaska. By I. J. Van Kammen.

Alarming Scarcity of Vultures. By E. F. Pope.—Destroyed in Texas as carriers of cattle disease. Cf. also No. 10.

**Blue-Bird.** VIII, No. 8. September, 1916.

An Experience with the Winter Wren. By C. J. Stanwood.—An admirable study of the nesting and rearing of the young.

**The Wilson Bulletin.** XXVIII, No. 1. March, 1916.

<sup>1</sup> Decrease of Birds in South Carolina. By Belle Williams. Bull. 47, Univ. of South Carolina, Columbia, S. C. August, 1916. pp. 1–69.

- North Dakota. By Gerard A. Abbott.
- Notes on Birds of Regions with Primitive Prairie Conditions. By T. L. Hankinson.—An Ecological Classification.
- The Terns of Weepeeket Islands, Massachusetts. By A. R. Cahn.
- A Study of a White-breasted Nuthatch. By Winsor M. Tyler, M. D.
- November Bird-Life at Reelfoot Lake, Tenn. By A. F. Gainer.—Apparently the first paper on birds of this region since that of S. N. Rhoads (Proc. Acad. Nat. Sci. Phila., 1895).
- The Whisper Songs of Birds. By J. J. Schafer.—Heard both in spring and autumn.
- The Wilson Bulletin.** XXVIII, No. 2. June, 1916.
- The Yellow-billed Tropic-Bird. By Karl Plath.—In Bermuda.
- A Brewer Blackbird Roost in Redlands [Cal.]. By Florence M. Bailey.
- The Goldfinch in Captivity. By J. Claire Wood.
- The Annals of Three Tame Hermit Thrushes. By C. J. Stanwood.
- A Brief History of the Nebraska Ornithologists' Union. By Myron H. Swenk.
- A Recent Instance of the Nesting of Barn Swallows on Cliffs. By N. DeW. Betts.
- The May Bird Census.—Lists for single days in mid-May, the largest being 138 at Oberlin, Ohio, May 15, 1916, made by six observers.
- The Wilson Bulletin.** XXVIII, No. 3. September, 1916.
- A Strange Nesting of the Barred Owl and Red-shouldered Hawk. By Walter A. Goelitz.—Close together on the same tree.
- Birds by the Wayside. By Althea R. Sherman.—In Palestine and from Jaffa to Constantinople.
- Fall Migration Records (1906–1915) at Ann Arbor, Michigan. By A. D. Tinker and N. A. Wood.
- An April Day's Migration in the Dakota Valley. By S. S. Visser.
- Preliminary List of the Birds of Floyd County, Iowa. By C. L. Fenton.
- Ninety species.
- Notes on the Breeding Warblers of Tennessee. By A. F. Gainer.
- The Ibis.** X Series, IV, No. 4. October, 1916.
- On the Coloration of the Mouths and Eggs of Birds. II. On the Coloration of Eggs. By C. F. M. Swynnerton.—This important paper reviews the various theories that have been advanced to explain the coloration of eggs and presents a number of original comments and criticisms. Several experiments are also described in detail, dealing with transference of eggs from one nest to another, and the preference of the rat and mongoose for eggs of various colors.
- Some Birds of Palawan, Philippine Islands. By Willoughby P. Lowe.
- The Bird-Caves of the Bermudas and their Former Inhabitants. By Dr. R. W. Shufeldt (see p. 98 *antea*).
- Eider Duck on the Ythan. By H. R. Kelh.
- Obituaries of J. A. Harvie Brown and others.
- Bulletin of the British Ornithologists' Club.** CCXVIII. October 24, 1916.

The following new birds are described: By Lord Rothschild, *Micraea flavigaster lactissima* (p. 4), Queensland. By Dr. Hartert, *Corydon sumatranus brunescens* (p. 4), Borneo; *Diaptrornis semicinctus* (p. 4), E. Congo Free State. By Mr. T. Carter, (p. 6); *Calamanthus campestris hartogi*, *Sericornis maculatus hartogi*, and *Stipiturus malachurus hartogi* all from Dirk Hartog Isl., W. Australia.

**British Birds.** X, No. 5. October, 1916.

Obituary of J. A. Harvie Brown.

Some Breeding Habits of the Sparrow Hawk (concluded). By J. H. Owen.

**British Birds.** X, No. 6. November, 1916.

The Moults of the British Passeres with Notes on the Sequence of their Plumages. By H. F. Witherby (continued).

**Avicultural Magazine.** VII, No. 11. September, 1916.

Nesting Notes from the Zoological Gardens. By D. Seth-Smith.—Rhea, Tinamou, Manucode, etc.

The Black Redstart and its Breeding Haunts. By H. D. Astley.

Bird Song. By "Birdlover."—An excellent review of the nature and origin of song.

**Avicultural Magazine.** VII, No. 12. October, 1916.

Notes on the Red-winged Bush Shrike (*Telephoneus australis minor*). By V. G. L. van Someren.

The Imitative Power of Birds. By A. G. Butler.

Cuvier's Podargus. By Graham Renshaw.—Habits in captivity.

Bird Life on Yanko Creek, N. S. W. By C. Barrett.

**Bird Notes.** VII, No. 4. April, 1916.

Some Colony Birds. Reprint from 'Timehri,' Jour. Roy. Agric. and Commercial Soc. of British Guiana.—Account of many British Guiana species, continued to the September number.

**Bird Notes.** VII, No. 5. May, 1916.

Bird Catching in India. By Douglas Dewar.

**Bird Notes.** VII, No. 6. June, 1916.

Photograph of a hybrid quail, *Callipepla squamata* × *Lophortyx californica*.

**Journal of the South African Ornithologists' Union.** XI, No. 1. December, 1915.

The Birds of Philipstown, Cape Province with Notes on their Habits. By H. L. Hare.

Ornithological Notes from Natal. By E. C. Chubb.

The Curlew in South Africa. By John Wood.

Remarks upon some Widely Distributed Family Traits. By A. A. Lane.

Birds of the Kaffrarian Frontier. By F. A. O. Pym.

Birds in Relation to their Prey. By C. F. M. Swynnerton.—Feeding Actions of Wood Hoopoes, Small Hornbill and a Babbler.

**The South Australian Ornithologist.** II, Pt. 8. October, 1916.

Birds of the North and Northwest of Australia (No. 7). By G. M. Mathews.

Notes on the Genus *Epthianura*. By A. M. Morgan.

**Revue Française d'Ornithologie.** VIII, No. 90. October, 1916.  
[In French.]

List of Birds Collected or Observed on the Ivory Coast, [Guinea] 1906-1907 and 1913-1914 (continued in No. 91). By Drs. Bonet and Millet-Horsin.

Contribution toward an Ornithological Study of Provence. By Jos. L'Hermitte (concluded).

**Revue Française d'Ornithologie.** VIII, No. 91. November, 1916.  
Noxious Birds and Animals and their Reasonable Destruction.—By Count Tristan.

**Ardea.** V, No. 2. August, 1916. [In Dutch.]

Report on the Meeting of the Netherlands Ornithological Society, Leiden, March 26, 1916.

On Ringing Titmice and Other Small Birds. By J. L. F. DeMeyers.

Contribution to a Study of the Least Bittern (*Ardetta minuta*). By A. Burdet.

**Messenger Ornithologique.** VII, No. 3. [In Russian.]

Materials for an Ornithology of N. W. Mongolia (cont'd.). By A. I. Tugarinow.

On the Gray Goldfinch (*Carduelis caniceps*) of Russian Turkestan. By N. A. Sarudny.

Preliminary Review of the Subspecies of the Linnets (*Acanthis cannabina*). By Prince Alex. Koudashev.—Seven are recognized, of which *A. c. taurica* (p. 178) from Krym and *A. c. persica* (p. 179) from Northern Persia are new.

*Turtur ferrago silvarum* subsp. nova. (p. 181.) By H. Johansen.

On the Paper of N. A. Sarudny "On some Swallows from Russian Turkestan." By Baron G. V. Loudon.

Nest and Eggs of *Numenius tenuirostris* Vieill. By V. E. Ushakov.

#### Ornithological Articles in Other Journals.<sup>1</sup>

**Pearson, T. G.** Uncle Sam's Birds. (Amer. Mus. Journ., XVI, No. 6, October, 1916).

**Despott, G.** Ornithological Report for the Maltese Islands. (Zoologist, October, 1916).

**Butterfield, E. P.** Behavior of Two Young Cuckoos in One Nest, (Zoologist, August, 1916.)

**Saunders, W. E.** Another Nesting Site of the Prairie Warbler in Ontario. (Ottawa Naturalist, Aug.-Sept., 1916.)

<sup>1</sup> Some of these journals are received in exchange, others are examined in the library of the Academy of Natural Sciences of Philadelphia. The Editor is under obligations to Mr. J. A. G. Rehn for a list of ornithological articles contained in the accessions to the library from week to week.



**Gammell**, Isaac. The Evening Grosbeak in the East. (Canadian Record of Science, IX, No. 8.)

**Allen**, E. C. Annotated List of Birds of Yarmouth and Vicinity, Southwestern Nova Scotia. (Trans. Nova Scotia Inst. of Science, XIV, pt. 2.) — 170 species and subspecies.

**Bunker**, P. D. Nesting of the Philippine Glossy Starling. (Philippine Jour. of Science, XI, Sect. D, No. 4, July, 1916.)

**McGregor**, P. C. New or Noteworthy Philippine Birds. I. (Philippine Jour. of Science, XI, Sect. D., No. 4, July, 1916.) — *Leucotreron merrilli* (p. 269) Luzon, is described as new.

**Mottram**, J. C. An Experimental Determination of the Factors which Cause Patterns to Appear Conspicuous in Nature. (Proc. Zool. Soc. London, 1916, pt. II.)

**Bate**, Dorothea M. A. On a Small Collection of Vertebrate Remains from the Har Dalam Cavern, Malta; with Note on a New Species of the Genus *Cygnus*. (Proc. Zool. Soc. London, 1916, pt. II.) — *Cygnus equitum* (p. 427) sp. nov.

**Coward**, T. A. Change in the Habits of the Black-headed Gull. (Mem. and Proc. Manchester Lit. and Phil. Soc., Vol. 60, pt. I.) — *Larus ridibundus*.

**Haagner**, A. K. Game and Bird Protection in South Africa: A Short Comparison with some Other Countries. (S. Afr. Jour. of Science, XII.)

**Moulton**, J. C. Hand List of the Birds of Borneo. (Jour. Straits Branch, Roy. Asiatic Soc., 1914, No. 67.) — A list of 555 species by the curator of the Sarawak Museum, and a bibliography of 231 titles.

**Baker**, E. C. Stuart. Game Birds of India, Burma and Ceylon. (Jour. Bombay Nat. Hist. Soc., XXIV, No. 3.)

**Currie**, A. J. Birds of Lahore and Vicinity. (Jour. Bombay Nat. Hist. Soc., XXIV, No. 3.)

**Whistler**, H. Some Birds Observed at Dalhousie. (Jour. Bombay Nat. Hist. Soc., XXIV, No. 3.)

**Salvadori**, T. Birds collected by the Duchess of Aosta in Equatorial Africa. (Ann. Mus. Zool. K. Univ. Napoli, IV, No. 10.) [In Italian.] — List of 190 species.

**Angelini**, G. Contribution on the Distribution of *Lanius senator badius* (Hartl.). (Boll. Soc. Zool. Ital., X-XI.) [In Italian.]

**Selous**, Edmund. Sexual Selection in Birds. (Wild Life, June-September, 1916.)

**Scott**, Rev. D. A. Illustrated articles on the English Curlew and the Peregrine Falcon. (Wild Life, July and September, 1916.)

**Publications Received.**—**Bangs**, Outram. The Smaller Mockingbird of the Northern Bahamas. (Proc. N. E. Zool. Club, VI, p. 23, March 29, 1916.)

**Bryant**, Harold C. Habits and Food of the Roadrunner in California. (Univ. of Cal. Publ. in Zool., Vol. 17, No. 5, pp. 21-50, October 26, 1916.)

**Cherrie, George K.** A Contribution to the Ornithology of the Orinoco Region. (Science Bull., Museum Brooklyn Inst., Vol. 2, No. 6, pp. 133-374, September 1, 1916.)

**Cooke, Wells W.** Second Annual Report of Bird Counts in the United States, with Discussion of Results. (Bull. 396, U. S. Dept. Agr., pp. 1-20, October 23, 1916.)

**Crosby, M. S.** The Spring Migration of Birds in Dutchess County, N. Y. 12mo., folder. 1916.

**Curtis, M. R.** Frequency of Occurrence of Tumors in the Domestic Fowl. (Jour. of Agriculture, V, No. 9, pp. 397-404, November 29, 1915.)

**Forbush, Edward H.** (1) The Natural Enemies of Birds, Economic Biology. Bull. No. 3, Mass. State Board of Agriculture, pp. 1-58, 1916. (2) Food Plants to Attract Birds and Protect Fruit. Circular No. 49, *Ibid.*, June, 1916.

**Fry, H. J.** The College Graduation Thesis as a Method of Bird Study. (Bird-Lore, July-August, 1916, pp. 261-265.)

**Grinnell, Joseph.** A New Ruffed Grouse from the Yukon Valley. (The Condor, XVIII, pp. 166-167, July, 1916.)

**Grinnell, Joseph and Storer, Tracy I.** Animal Life as an Asset of National Parks. (Science, XLIV, No. 1133, pp. 375-380, September 15, 1916.)

**Gyldenstolpe, Nils.** Zoological Results of the Swedish Zoological Expeditions to Siam, 1911-1912 and 1914-1915. IV. Birds II. (Kungl. Svenska Vetenskapsakad. Handl. Band 56, No. 2, pp. 1-160, 1916.)

**Hartert, Ernst.** (1) On the Forms of *Rhodinocichla rosea*. (Novitates Zoologicae, XXIII, p. 229, September, 1916.) (2) What is the Correct Name of the Arabian Sea Tern? (*Ibid.*, p. 288.) (3) The Alleged Occurrence of *Arenaria melanocephala* (Vig.) in India. (*Ibid.*, pp. 291-292.) (4) On the European Forms of *Phalacrocorax carbo*. (*Ibid.*, pp. 293-295.) (5) More Erroneous Quotations and Other Errors. (*Ibid.*, pp. 295-296.)

**Mearns, E. A.** On the Geographical Forms of the Philippine Elegant Titmouse, *Pardaliparus elegans* (Lesson) with Descriptions of three New Subspecies. (Proc. U. S. Nat. Mus., Vol. 51, pp. 57-65, October 16, 1916.)

**Mullens, W. H. and Swann, H. Kirke.** A Bibliography of British Ornithology from the Earliest Times to the End of 1912. Macmillan and Co., Ltd., St. Martin's Street, London, 1916. Part III. 6/net.

**Nichols, John Treadwell.** On Primarily Unadaptive Variants. (Amer. Nat., Vol. L, pp. 565-574, September, 1916.)

**Noble, G. K.** The Resident Birds of Guadeloupe. (Bull. Mus. Comp. Zool., Vol. LX, No. 10, pp. 359-396, August, 1916.)

**Palmer, T. S., Bancroft, W. T. and Earnshaw, F. L.** Game Laws for 1916. Farmers Bulletin 774. U. S. Dept. Agriculture, pp. 1-64, October 9, 1916.

**Pearl, Raymond, and Curtis, M. R.** Studies on the Physiology of Reproduction in the Domestic Fowl.—XV. Dwarf Eggs. (Jour. Agr. Research, VI, No. 25, U. S. Dept. Agr., September 18, 1916, pp. 977-1042.)

**Peters, James L.** A New Swift from Santo Domingo. (Proc. N. E. Zool. Club, VI, pp. 37-38, November 23, 1916.)

**Riley, J. H.** Three Remarkable New Species of Birds from Santo Domingo. (Smithson. Misc. Collns., Vol. 66, No. 15, pp. 1-2, December, 1, 1916.)

**Rothschild, Lord and Hartert, Ernst.** (1) On Some Forms of *Cora-cina* (*Graucalus* Auct.) from the Solomon Islands. (Novit. Zool. Vol. XXIII, pp. 289-291, September, 1916.) (2) A New *Monarcha* from Rossel Island. (*Ibid.*, p. 297.)

**Scudder, Bradford A.** Conservation of our Wild Birds. Issued by the Massachusetts Fish and Game Protective Association 748, Tremont Building, Boston, pp. 1-71.

**Shufeldt, R. W.** (1) Albinism in American Animals. (Proc. Zool. Soc. London, 1916, pp. 540-541.) (2) Fossil Birds' Eggs. (Emu, 1916, pp. 80-91.) (3) New Extinct Bird from South Carolina. (Geological Magazine, Dec., VI, Vol. III, pp. 343-347, August, 1916.) (4) Osteology of *Palaeornis* with other Notes on the Genus. (Trans. Royal Soc. of S. Africa, V, Pt. 5, June, 1916.) (5) The Bird-Caves of the Bermudas and their Former Inhabitants. (Ibis, October, 1916, pp. 623-635.)

**Swarth, H. S.** The Sahuaro Screech Owl as a Recognizable Race. (Condor, July, 1916, pp. 163-165.)

**Townsend, C. W., M. D.** Bird Conservation in Labrador. (Seventh Ann. Rept. Comm. of Conservation, Canada, 1916; separately paged, 1-9.)

**Tyler, John G.** Some Birds of the Fresno District, California, Supplementary Notes. (Condor, September, 1916, pp. 194-198.)

**Wetmore, Alexander.** The Speed of Flight in Certain Birds. (Condor, May, 1916, pp. 112-113.)

**Williams, Belle.** The Decrease of Birds in South Carolina. Bulletin, No. 47 of the Univ. of S. Carolina. August, Columbia, S. C., 1916, pp. 1-69.

**American Museum Journal, The,** XVI, Nos. 6 and 7, October and November, 1916.

**Ardea, V,** No. 2, August, 1916.

**Avicultural Magazine,** (3) VII, Nos. 11 and 12 and VIII, No. 1, September, October and November, 1916.

**Bird-Lore,** XVIII, No. 5, September-October, 1916.

**Bird Notes and News,** VII, No. 3, autumn, 1916.

**Blue-Bird, The,** VIII, Nos. 8 and 9, September and October, 1916.

**British Birds,** X, Nos. 5 and 6, October and November, 1916.

**Bulletin British Ornith. Club,** CCXVIII, October 24, 1916.

**Bulletin Charleston Museum,** XII, Nos. 6 and 7, October and November, 1916.

**California Fish and Game,** II, No. 4, October, 1916.

**Canadian Record of Science, The,** IX, No. 8, September, 1916.

**Condor, The,** XVI, No. 5, September-October, 1916.

**Fins, Feathers and Fur,** No. 7, September, 1916.

**Forest and Stream**, LXXXVI, Nos. 10 and 11, October and November, 1916.

**Ibis**, The, (10) IV, No. 4, October, 1916. Also Index to Genera and Species in The Ibis, 1895-1912. Wm. Wesley & Son, 28 Essex St., Strand, London, W. C. Price, £1, 12s. 6d.

**Messenger**, Ornithologique, VII, No. 3, 1916.

**New Jersey Audubon Bulletin**, No. 16, November, 1916.

**Oölogist**, The, XXXIII, Nos. 9, 10 and 11, September, October and November, 1916.

**Ottawa Naturalist**, The, XXX, Nos. 5-6, and 7, August-September and October, 1916.

**Philippine Journal of Science**, XI, Sec. D, No. 4, July, 1916.

**Proceedings and Transactions Nova Scotian Inst. Sci.**, XIV, Pt. 2, September, 1916.

**Records of the Australian Museum**, XI, Nos. 3 and 4, July 1 and August 12, 1916.

**Revue Française d'Ornithologie**, VIII, Nos. 90 and 91, October and November, 1916.

**Science**, N. S., XLIV, Nos. 1135 to 1146.

**Scottish Naturalist**, The, Nos. 57, 58 and 59, September, October and November, 1916.

**South Australian Ornithologist**, The, II, No. 8, October 1, 1916.

**Zoologist**, The, XX, Nos. 237 and 238, September and October, 1916.

## CORRESPONDENCE.

## Habits of the Great Crested Grebe.

EDITOR OF 'THE AUK'

*Dear Sir:—*

In this year's (1916) April number of 'The Auk,' Mr. Julian Huxley, in his interesting paper 'Bird Watching and Biological Science,' says, speaking of the Great Crested Grebe:—"There (that is to say in inland waters) in February, pairing-up takes place, a process not yet wholly disentangled, but certainly associated with a great deal of flying and chasing" (p. 150). Insofar, however, as I have been able to observe, this supposed pairing-up process does not take place at all, so that there is nothing to disentangle in relation to it, nor do any difficulties, specially appertaining to the behavior of the birds at this time, present themselves. Mr. Huxley was kind enough, before he left England, to send me his notes upon this species, and he suggested that I should investigate what took place immediately after the arrival of the birds in February, since he himself was precluded from doing so.

Accordingly, on the 15th of February, 1915, I went down to the Fring Reservoirs, and was told, by the keeper at whose cottage I stayed, that only two birds had yet been seen anywhere. Next day, however, the head keeper sent word that six had come down (I think the evening before, *i. e.* the 15th) on one of the two larger sheets of water. It was the opinion of the keepers that my own arrival and that of the birds synchronised closely. From now onwards, I watched the birds, up to March the 7th, by which time most, if not all of them, had at least located their nesting sites. As a result, I can say that, according to what I saw, these Grebes (I am not considering young and previously unmated birds, of which there was no indication) arrive paired, that they enter, either at once or very shortly, upon their conjugal display actions, and that the flying and chasing is neither a very pronounced feature, nor has it the import which has been attributed to it by (if I mistake not) the head keeper of the Tring Reservoirs; that is to say, it has not essentially to do with the assumed pairing-up of the actually already paired birds. The above is the gist of the notes which I took, and which still remain in their MS. state. Otherwise I should have sent them to Mr. Huxley, and had, indeed, intended to do so, in any shape or form, but one thing gets in the way of another, and tardiness increases with age.

It would seem therefore that, as I had suspected (and suspect in many more instances than where this is supposed to be the case) the Great Crested Grebe pairs for life, which fact, if established, would be in harmony with my view that excitatory sexual movements either first arose under,



or continued after, the first union of the sexes, to accompany monogamous conjugal relations, and then, by a process of evolution, the steps in which may, I think, be partly traced and partly inferred, passed, as a culmination, into true Darwinian sexual selection. I do not however mean to imply that this has been the invariable course of development, or that mere promiscuity may not, at an earlier stage, have sometimes preceded monogamy.

At p. 151, speaking of the "ceremonies connected with coition," Huxley says:— "The chief point to be remarked is that both cock and hen may adopt this attitude" — that is to say the prostrate attitude, preceding and accompanying coition, which rightly belongs to the female alone. My own observations, however, made in 1900 and 1901, were sufficient to assure me that this interchangeability of action as between the two sexes, in their sexual relations, extended to the actual pairing itself, and I have since confirmed this in the case of the Little Grebe (or Dabchick), for, having closely and continuously watched a pair of these birds, established in a pond, and thus, as I may say, well under control, I have seen either bird alternately assume the part of either sex during coition. This reversal extended to the minutest particular, so that the false and true unions were indistinguishable. Thus we have — for what else are we to term it? — functional hermaphroditism in both the Great Crested and Little Grebe. My observations on the latter species were published in 'Wild Life' from July to December (inclusive), 1915.

It is, I think, a legitimate inference that this dual functioning of either sex, in the primary and all-important sexual act, must (or is likely to) imply a similar duality of the sexual psychology, in each, and this would, in itself, account, or help in accounting for, the identity of much of the masculine and feminine conjugal display action in the Great Crested Grebe. I have made similar observations on the Moorhen — in which species also this identity exists — and, so far as the actual pairing is concerned, in the case of the Dovecote Pigeon. Also I have good first hand evidence of the same nature concerning the Mute Swan, and can myself speak as to very salient springtide antics carried out by both the male and female Whooper Swan, when conjugally united. To me it is almost inconceivable that these peculiar pairing habits have been brought about, independently, in different species, through the operation of more or less recent utilitarian causes. The root cause is, I believe, the joint inheritance, by all, and in each sex, through a common line of ancestry, dating from a remote past, of that sexual psychology which once co-existed with physiological hermaphroditism; of which persistence, therefore, the lesser or secondary bisexual activities are also to be regarded as effects. It is, of course, obvious that, so far as the sexual mentality of birds is concerned, the above inference need not alone apply to species that have this odd habit of double coital functioning, for a general inherited tendency need not necessarily be accompanied by some particularly salient indication of it, in action. The study of man sufficiently illustrates this.

In the paper in which I first recorded the activity here specially dwelt upon, in the case of the Great Crested Grebe, I put forward the above view, in explanation of it. Now, many years afterwards, I learn that the late Professor Metchnikoff held the same opinion (whether in reference to my own notes which, so far as I know, first placed the facts upon record, or otherwise, I am not sure) and Haeckel's concurrence also, I think, lies implicit in his work 'The Evolution of Man,' though he does not there mention — probably through not having been aware of it — the matter in question. I would suggest, therefore, under shelter of these names, that a new possible factor enters into the philosophy of nuptial or ante-nuptial excitatory actions in birds, and, through these, of true purposive display and progressive sexual selection.

EDMUND SELOUS.

6 Albany Gardens,  
King's Road,  
Richmond Survey.  
Nov. 22, 1916.

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#### NOTES AND NEWS.

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PROFESSOR FOSTER ELLENBOROUGH LASCELLES BEAL, a Fellow of the American Ornithologists' Union, died suddenly at his home near Berwyn, Md., October 1, 1916. Professor Beal was in the 77th year of his life and in the 25th of service in the U. S. Biological Survey. He was born at South Groton, Massachusetts, January 9, 1840. His early life was spent upon a farm, but he was determined to get an education and was graduated from the Massachusetts Institute of Technology in 1872. He was professor of mathematics in the United States Naval Academy in 1873-4, and professor, in turn, of mathematics, zoölogy, and geology in the Agricultural College at Ames, Iowa, from 1876 to 1883. He was employed in the Biological Survey for six months in 1886 and began his permanent term of service in 1892. He prepared, either wholly or in part, 24 official publications, besides numerous other scientific articles, and played an important part in building up the existing system of laws for the protection of American birds. A full account of the life and work of Professor Beal will be published in a later number of 'The Auk.' — W. L. M.

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NEVER before has death taken such heavy toll from the active membership of the American Ornithologists' Union, as in the year 1916. The loss of four of the Fellows, Dr. D. G. Elliot,<sup>1</sup> Prof. Wells W. Cooke,<sup>1</sup> Prof. F. E. L. Beal, and Dr. E. A. Mearns, two of whom were founders, has now reduced the list of surviving founders of the Union to less than half its original number. Dr. Edgar Alexander Mearns died at the Walter Reed Hospital, in Washington, D. C., on November 1, 1916, only a few days before the last annual meeting.

The son of Alexander and Nancy R. (Carswell) Mearns, he was born at Highland Falls, N. Y., September 11, 1856. He graduated from the College of Physicians and Surgeons (Columbia University) in 1881, and in the same year married Miss Ella Wittich of Circleville, Ohio. On December 3, 1883, he received an appointment as first lieutenant and assistant surgeon in the medical corps of the U. S. Army and remained 25 years in active military service. He was promoted to the rank of captain and assistant surgeon December 3, 1888, major and brigade surgeon of volunteers, June 4, 1898, major and surgeon in the regular army February 2, 1901, and was retired with the rank of lieutenant colonel on January 1, 1909. He was one of the most eminent of that group of army surgeons which includes Cooper, Coues, Hammond, Henry, Merrill, Suckley and others, who in addition to their regular military duties, found time to do field work in natural history and thus were able to add much to our knowledge of the zoölogy of the west.

Dr. Mearns's first ornithological papers, containing notes on rare birds in the Hudson Valley near West Point, appeared in the 'Bulletin of the Nuttall Ornithological Club' in 1878, and his 'List of Birds of the Hudson Highlands' which still remains one of the most complete papers on the birds of this part of New York, was published in 1879-81. While serving in the army his most notable work was done at Fort Verde, Ariz., in the eighties, on the Mexican Boundary Commission in 1892-94, and during his service in the Philippines in 1903-04 and 1905-07. Reports have been published on only a part of his Boundary collections. His 'Mammals of the Mexican Boundary' contains accounts of the trees, big game and rodents but unfortunately this report was never completed and no comprehensive account of the birds has thus far been published. Several papers on his Philippine birds have appeared from time to time.

In 1909 Dr. Mearns accompanied Col. Theodore Roosevelt on the Smithsonian African Expedition to British East Africa and in 1911-12 he visited Abyssinia as field naturalist of the Childs-Frick African Expedition. Since his return from this expedition he has been busily engaged in working up his collections. He has published a number of papers on the most interesting novelties among the birds, and at the time of his death was preparing a comprehensive report on the birds obtained in Africa.

Dr. Mearns was an enthusiastic all-round naturalist. While interested

<sup>1</sup> See Vol. XXXIII, pp. 230-231 and 354-355, 1916, and memorial address, *antea* pp. 1-10.

primarily in vertebrates, he was also a good field botanist and devoted much attention to land shells and to ethnology. He was an indefatigable collector, a careful observer, and wherever he went he never missed an opportunity to secure material illustrating the natural history and ethnology of the region. The collections of the U. S. National Museum and the American Museum of Natural History have been greatly enriched as a result of his active field work. He also had the ability and desire — too often lacking in active field collectors — to work up his material whenever he had the proper facilities, and as opportunity offered he placed on record descriptions of new species, and notes on nomenclature, distribution and habits of the birds and mammals which had come under his observation.

He was an Associate in Zoölogy of the National Museum, a patron of the American Museum, a correspondent of the Academy of Natural Sciences of Philadelphia, a Founder of the American Ornithologists' Union, and a member of the American Association for the Advancement of Science, the Linnean Society of New York, the Biological Society of Washington, and the Washington Academy of Sciences. In manner he was quiet and unassuming, deeply interested not only in his own work but in that of others and his enthusiasm and uniform cheerfulness were an inspiration to those who were privileged to be numbered among his friends.

A Memorial address on Dr. Mearns will be read at the next meeting of the Union.— T. S. P.

EDWARD ARTHUR BUTLER, a Corresponding Fellow of the American Ornithologists' Union died at his home, Winsford Hall, Stokesby, near Great Yarmouth, England, on April 16, 1916, in his 73rd year. We learn from 'The Ibis' that he was born in Warwickshire and was educated at Eton, entering the army in 1864 and retiring with the rank of Lieut. Colonel, in 1884. Later he participated in the Boer War in South Africa. During eleven years in India he was associated with Allan Hume and others who, like himself, were interested in ornithology. He did much collecting and was a contributor to 'Stray Feathers' and the 'Bombay Gazetteer'. The results of his observations in Africa were published in 'The Zoologist' and 'The Ibis.'— W. S.

PROF. ALBERT JOHN COOK of Claremont, Calif., an Associate Member of the American Ornithologists' Union from 1894 to 1898, died at the home of his son at Owosso, Mich., on September 30, 1916. Prof. Cook was born at Owosso on August 30, 1842, and at the time of his death had recently celebrated his 74th birthday. He was the son of Ezekiel and Barbara Ann (Hodge) Cook, and a graduate of the Michigan Agricultural College (B. S. 1862, M. S. 1865, and D. Sc. 1905). For 26 years he was connected with the faculty of his alma mater. He served as instructor in mathematics 1867-69, and professor of zoölogy and entomology 1868-93, at the same time acting as curator of the Museum 1875-93,

and entomologist of the experiment station 1888-91. In 1893 he removed to Claremont, Calif., where, for 18 years, until 1911, he was associated with Pomona College as professor of biology. During the last five years of his life he served as state commissioner of horticulture of California.

Although primarily an entomologist, Prof. Cook was interested in other branches of zoölogy and published several valuable papers on birds. From 1872 to 1875 he contributed five short articles on the relation of birds and insects to the Reports of the Michigan State Pomological Society and the State Board of Agriculture and in 1896 one on the 'Food of Woodpeckers and Flycatchers' to 'The Auk.' His principal ornithological contribution was his 'Birds of Michigan' published in 1893 as Bulletin 94 of the Michigan Agricultural Experiment Station. This report was issued in two editions, one containing 148 pages, in April, and the other containing 168 pages, in September. It included notes on 332 species and a full bibliography of Michigan ornithology. This very useful list, which brought together in convenient form the many scattered notes on the birds of the State, was reviewed in 'The Auk' for 1893, pp. 351-352. Some of the species have since been transferred to the hypothetical list and Prof. W. B. Barrows, although adding a number of others in his 'Report on Michigan Bird Life,' in 1912 recognized only 326 species as positively identified within the limits of the state.

Prof. Cook was married twice. On June 30, 1870, he married Miss Mary H. Baldwin of Dayton, O., and on July 3, 1897, Mrs. Sarah J. Eldredge of Pasadena, Calif. He is survived by the latter, by his son, A. B. Cook of Owosso, Mich., and by his daughter, Mrs. Lyman J. Briggs of Washington, D. C.—T. S. P.

PROF. DONALDSON BODINE, an Associate of the American Ornithologists' Union, died on August 26, 1915, at Douglas Lake, Michigan, in the forty-ninth year of his age. He was born in Richboro, Pa., December 13, 1866; graduated from Cornell University in 1887, and received the degree of Sc.D. from his Alma Mater in 1895. At the time of his death he was professor of geology and zoölogy in Wabash College, Crawfordsville, Indiana.—J. H. S.

TIMOTHY OTIS FULLER, an Associate of the American Ornithologists' Union, died at his home in Needham, Mass., August 17, 1916, aged 71 years. He was born in Needham, February 2, 1845, where his family had resided since the beginning of the nineteenth century. While engaged in business he found time to serve his town in several important capacities. Mr. Fuller's great interest however, was in nature and he spent much time in tramps, studying the birds and flowers of his vicinity as well as those of the White Mountains, a region with which he became thoroughly familiar. He was a true lover of nature and obtained from his studies an unusual knowledge of the "great outdoors" which he was ever ready to share with others.—W. S.



LEWIS LINDSAY DYCHE, noted as an explorer and zoölogical collector, Professor of Zoölogy at the University of Kansas, and an Associate of the American Ornithologists' Union, died after a week's illness at Stormont Hospital in Topeka, Kansas, on January 20, 1915.

Professor Dyche was born in Berkeley Springs, West Virginia, on March 20, 1857. His parents removed to Kansas three months later and settled on the Wakarusa River near Topeka. He began his education in a country school at the age of twelve, then entered the State Normal School at Emporia and three years later in 1881 enrolled in the State University at Lawrence. Here he came in contact with Dr. Francis H. Snow who seeing his strong interest in zoölogy encouraged and aided him in every way possible. Professor Dyche graduated from the University in 1884, took the degree of Master of Arts in 1886 and Master of Science in 1888. Even before his graduation he was made Assistant Professor of Zoölogy. In 1890 he became curator of birds and mammals in the University Museum of Natural History and was made Professor of Zoölogy. Though occupied in teaching and lecturing much of his time was given to building up the collections of vertebrates in the museum. His energies were devoted largely to collecting and mounting groups of large mammals for exhibition but birds were not neglected and the bird skins gathered on his expeditions form the nucleus of the collections in ornithology at present stored in the institution. Notable among his gatherings is a series of skins from Greenland. His dreams of a Museum were realized in 1903 when he was given a new building on the University Campus in which to house his collections. In 1909 Professor Dyche while still retaining his position in the university was made State Fish and Game Warden and held that position until the time of his death. He was elected an Associate in the Union in 1886. Though his observations as a field naturalist were many, his published writings are few. He contributed brief notes on the occurrence of certain birds in Kansas at various times to 'The Auk' and to the 'Transactions of the Kansas Academy of Science', and short papers appeared elsewhere.—A. W.

MISS MARY BISSELL FERRY, an Associate of the American Ornithologists' Union, died in Norwalk, Conn., March 18, 1915, in the sixty-sixth year of her age. She was a daughter of the late U. S. Senator Orris S. Ferry, of Connecticut, and granddaughter of Gov. Clark Bissell of the same State. A cousin, Miss Mary A. Bissell, writes of her: "Miss Ferry was a woman of noble character, broad philanthropy, and high literary attainments, inheriting much of her father's vigorous mentality. She was an ardent lover of nature, and an enthusiastic bird student lending her influence to all legislation for their protection. The last ten years of her life were spent with her mother, at their home in Norwalk, amid charming surroundings of woodland and meadow, made especially attractive to the birds by pools, bird shelter boxes, and food in abundance during the winter months. Her little feathered friends repaid their sympathetic and gener-

ous benefactor by flocking in great numbers to the place, and showing friendliness and tameness." Miss Ferry was born in Norwalk, September 17, 1849.—J. H. S.

MRS. JANE LOUISA HINE, an Associate of the American Ornithologists' Union, died in Sedan, Indiana, February 11, 1916, in her eighty-fifth year. She was the daughter of Lonson Brooks, and was born in Erie County, Ohio, April 2, 1831. After attending public schools in her native county she finished her education at Oberlin College. Early in life she became interested in birds and continued to study them as long as she lived. She wrote much on birds for 'The Farmer's Guide,' Huntington, Ind., and many of her notes are published in Butler's 'The Birds of Indiana.' Her 'Observations on the Ruby-throated Hummingbird' is printed in 'The Auk' (1894, pp. 253-254).—J. H. S.

OWING to ill health, Mr. H. W. Henshaw has resigned his position as Chief of the Bureau of Biological Survey, Department of Agriculture, dating from December 1. Mr. Henshaw has been connected with the Department of Agriculture since 1905, serving as Assistant Chief of the Bureau until 1910, thence on as Chief. During this period the Survey has grown rapidly. In order that the Bureau may continue to have the benefit of Mr. Henshaw's knowledge and experience he will retain official connection with it as consulting biologist.

Mr. E. W. Nelson, who has been on the scientific staff of the Bureau since 1890 and Assistant Chief since 1914, has been appointed to succeed Mr. Henshaw as Chief of the Bureau.

DR. GEORGE W. FIELD, formerly State Fish and Game Commissioner of Massachusetts is now a member of the Biological Survey Staff, in charge of Federal bird and mammal reservations.

ALICE HALL WALTER in the September-October issue of 'Bird-Lore' discusses a matter of vital importance in the advancement of popular ornithology.

"From time to time," she writes, "and from more than a single source, there has come the criticism that bird-study is in danger of being overpopularized. This criticism does not imply that bird-study should be limited either in its scope or to students of mature years and serious purpose. It does imply that there are persons who care to study birds only in a superficial way, that there are others who present lectures of a merely popular and too frequently similar type, and that the somewhat confused methods of bird- and nature study at present in use sometimes miss the point by reason of uninspired application and lack of personal initiative."

Ornithology is fortunate in being, for some reason or other, better adapted to popular study than any other science, and for that very reason the great-

est care should be taken to prevent its degeneration into a mere temporary fad or to be made ridiculous at the hands of exponents who are unfitted for their task.

The writer has always maintained that a lecture or an article can be scientific without being tiresome or unintelligible to a popular audience. In other words scientific facts can be presented in popular language without losing any of their force, but the man who does this must know, in the first place, what he is talking about.

As Mrs. Walter says "the superficial student is apt to shun the trained ornithologist's method" and "to balk at his standard of thoroughness." The inevitable result is to throw discredit upon the whole field of popular ornithology.

It would seem that those responsible for the activities of ornithological clubs or classes could do much to check such tendencies as Mrs. Walter has referred to.

The desire to have a lecturer at every club meeting and the natural necessity of cutting down expenses leads to accepting those who are only too anxious to appear on the lecture platform for little or no compensation and whose stock in trade consists of mere anecdotes and time worn facts. Better by far have one good speaker a year who is capable of speaking from personal experience and research and devote the other meetings to discussion of local observations under the direction of one who appreciates the difference between painstaking scientific field work and careless superficial observation.

The injurious element would thus soon be eliminated and the high standard of the study preserved.

Quality in popular ornithology is the need of today rather than quantity.  
—W. S.